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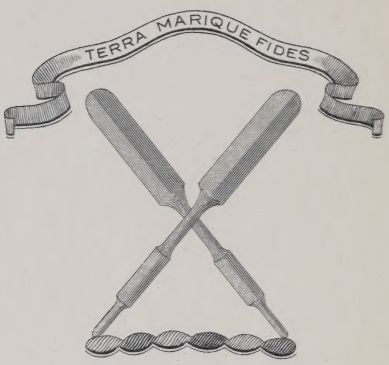

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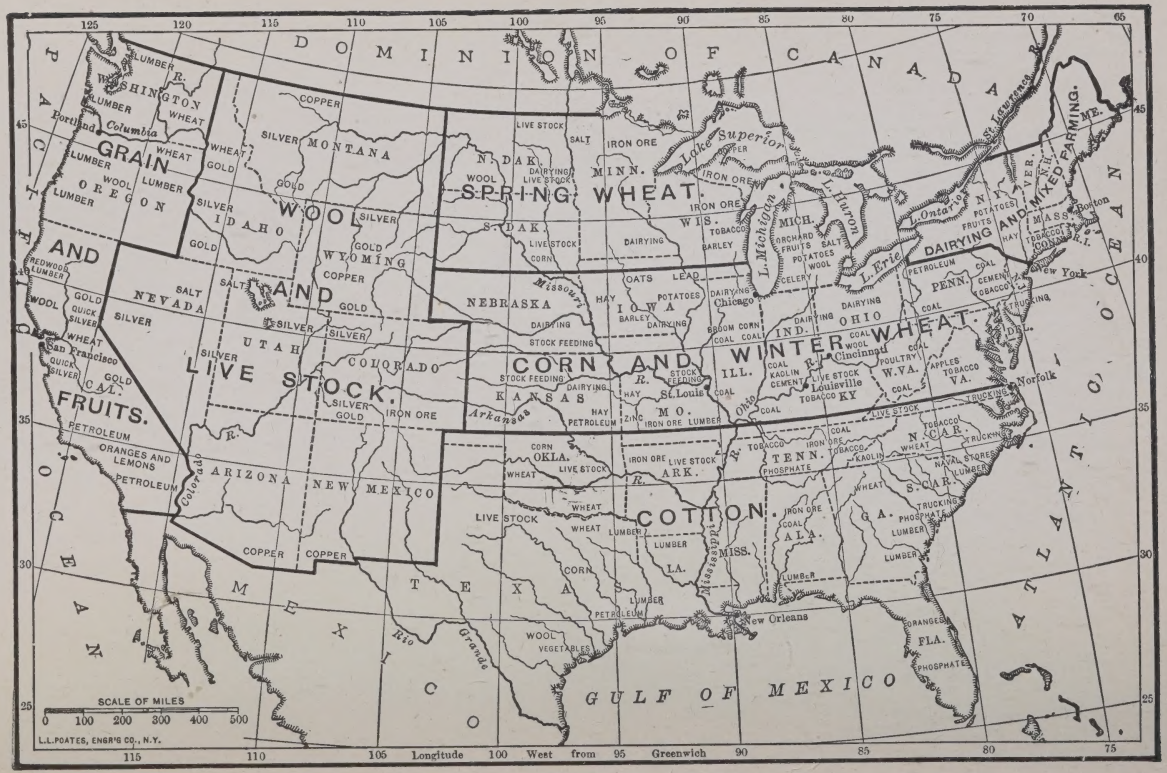

REGIONAL DISTRIBUTION OF PRODUCTS IN THE UNITED STATES

ECONOMIC HISTORY
OF
AMERICAN AGRICULTURE

BY
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PREFACE

In spite of the immense importance of agriculture in the life of the American people no one has yet had the temerity to essay a comprehensive history of this dominant branch of our economic activities. There exists a number of excellent studies of special phases or periods of our agricultural development, but no one of these is satisfactory for use as a textbook on the subject. The growth in the number of colleges of agriculture and of agricultural high schools, however, is evidence of a demand for such a book. The writer has ventured, therefore, to put out as an independent volume the chapters in his "Economic History of the United States" which relate to this topic. It is hoped that this little book, brief as it is, may serve acceptably the needs of teachers of agriculture or of agricultural economics. If it meets with as cordial a reception as has been accorded the larger work, its publication will be fully justified.

E. L. Bogart

CONTENTS

CHAPTER		PAGE
I.	Land and Resources	1
II.	Colonial Agriculture	17
III.	Cotton and Slavery. Agriculture	35
IV.	The Westward Movement	53
V.	Public Lands and Agriculture (1808–1860)	70
VI.	Slavery and the South	95
VII.	The Application of Machinery to Agriculture	111
VIII.	Agriculture as a Business	133
IX.	Conclusions	152

ILLUSTRATIONS

PAGE

A Colonial Wheel Plow of 1748 21
Hand Corn Sheller 23
Tobacco Field 25
Wooden Harrow and Fork 29
Eli Whitney (from a painting by Chappel) 36
Whitney's Cotton-gin 37
Deck Plan of a Slave-ship 41
Farming Tools, 1790 44
Migrating from Connecticut to Ohio 57
Conestoga Wagon 58
Mississippi River Flatboat 59
Mississippi River Steamers at Cincinnati, 1830 60
Horse Rake, 1818 71
Harvesting with Cradles 74
Plow and Neck Yoke, 1832 76
Improvement of the Wagon. I 79
Improvement of the Wagon. II 80
Improvement of the Wagon. III 80
Improvement of the Wagon. IV 81
First McCormick Reaper, 1831 (courtesy of the International Harvester Company of America) 83
Improvement of the Hog. I 87
Improvement of the Hog. II 87
Improvement of the Hog. III 88
Cotton Picking 96
Cotton Levee at New Orleans 98
Runaway Slave (from a newspaper picture) 105
A Modern Corn Harvester (courtesy of the International Harvester Company of America) 118
Great Northern Elevator and Shipping, Buffalo, N. Y. 120
A Modern Cotton-gin 124
Cream Separator (courtesy of the De Laval Separator Company, N. Y.) 127

PAGE
Power Churn and Butter Mixer 128
A Combined Harvester and Thresher in the State of Washington 134
Forty Binders at Work in Iowa (courtesy of the International Harvester Company of America) 136
Corn Husker and Shredder (courtesy of the International Harvester Company of America) 138
Irrigation Ditches 146

MAPS AND CHARTS

NO.
1. Regional Distribution of Products in the United States ..... *Frontispiece*
PAGE
2. Navigable Water-ways 4
3. The Fall Line of Rivers 5
4. Physical Map of the United States 10
5. Conflicting Land Claims of States, 1783 (colored) ..... *facing* 46
6. Territorial Growth of the United States 72
7. The Cotton Kingdom and Its Dependencies (from Olmsted's "The Cotton Kingdom"; colored) ..... *facing* 99
8. Distribution of Wealth in Massachusetts, 1830–1890 .. 154

CHAPTER I

THE LAND AND ITS RESOURCES

1. The conditions of economic development. — The main conditions of the industrial growth of any country consist of two factors — the character of the people and the natural resources. Only when the gifts of nature are bountiful and are intelligently utilized by man can a nation attain to the highest degree of strength and prosperity. The presence of rich natural resources alone has not been sufficient to secure the development of a weak, ease-loving race like the Latin-American, nor has mere growth in numbers, as in China or India, been enough to make the nation wealthy and strong. On the other hand, even a bold, vigorous race like the Scandinavian has not been able to make great advance in an inhospitable country like Iceland. In the territory now included in the United States, a virile, energetic people found extraordinary opportunities for industrial development, and devoted themselves to the exploitation of the natural resources with wonderful success. The keynote of the national history of the United States is to be found in this work of winning a continent from nature and subduing it to the uses of man. A truly gigantic task, it has absorbed the main energies of the American people from the beginning, and has been approached in significance only by the struggle to preserve the Union. Inevitably it has left its impress on the character and ambitions of the people. For this reason, says Woodrow Wilson, "the history of the country and the ambitions of its people have been deemed both sordid and mean, inspired by nothing better than a desire for the gross comforts of material abundance; and it has been pronounced grotesque that mere bigness

and wealth should be put forward as the most prominent grounds for the boast of greatness. The obvious fact is that for the creation of the nation the conquest of her proper territory from nature was first necessary; and this task, which is hardly yet completed, has been idealized in the popular mind. A bold race has derived inspiration from the size, the difficulty, the danger of the task. Expansion has meant nationalization; nationalization has meant strength and elevation of view."

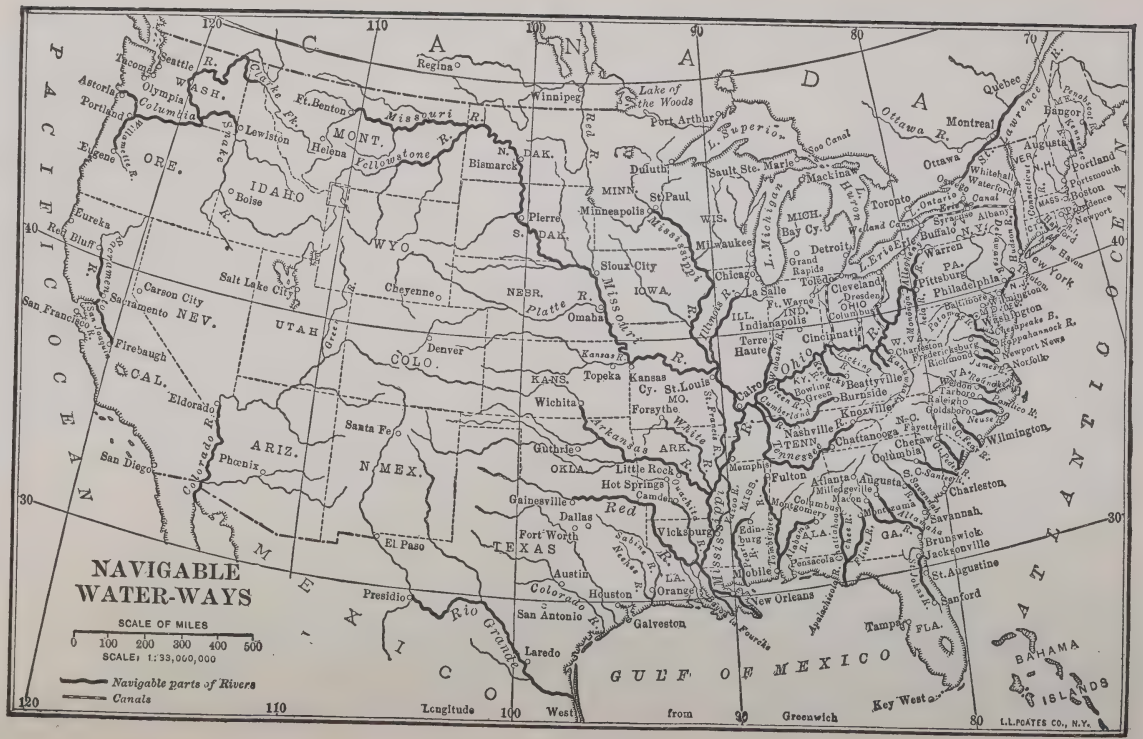
2. The character of the people. — Combining the best characteristics of many of the best stocks of Europe, the American people have yet developed some distinctive traits. They are characterized by qualities of nervous energy, intelligence, independence in thought and method, boldness in initiative, and perseverance in enterprise. The absorption in material pursuits and the over-emphasis of the value of material success, in part the result of inheritance and selection, has been largely developed as a result of the industrial environment. Partly as a result of these same forces and partly inherited, a peculiar aptitude in the invention and use of labor-saving machinery has been noted by all writers as a special characteristic of the American. Equally quick in devising original methods or adapting the ideas of others, he has applied machine methods to every line of production. Called into being at first by necessity, American ingenuity has been fostered and developed, and has found probably its best application in the invention of complicated tools.

3. Area of the United States. — The second great factor in the development of the country has been its material advantages. These purely physical foundations of greatness consist of expanse of territory, abundance of minerals, metals, and forest products, and extent of seacoast. In the first of these respects the United States has always been rich. By the treaty of Paris, 1783, the new nation came into possession of an immense domain of 827,844 square miles. Since that time the area of the United States has been vastly increased,

by purchase, by conquest, and by cession, until, in 1900, the United States consisted of 3,726,500 square miles or about one-fourteenth of the entire land surface of the earth. Continental United States, exclusive of Alaska or our island possessions, contains 2,972,584 square miles of land surface, or somewhat less than Europe, which has an area of some 3,700,000 square miles.

4. The coast line. — The advantages to a nation of having a seacoast well provided with numerous bays and harbors are obvious. Not less important for the internal commerce of a country is a system of long and navigable rivers. In both these respects the United States is wonderfully well provided. The Mississippi River with its tributaries drains over 1,000,000 square miles of territory in the very heart of the most fertile region of the country. Cities more than 1000 miles inland have direct water communication with the seaboard, and coal is transported more than 1000 miles from Pittsburg to the upper reaches of the Missouri River. Altogether, it is estimated that there are 18,000 miles of navigable rivers in the United States, while the shore line of the Great Lakes extends for at least 1500 miles more. The coast line on both oceans, including indentations, is not less than 18,000 miles in length, which gives about one mile of shore line for each 165 square miles of surface. Europe, which is the most favored in this respect of any division of the old world, is estimated to have 19,500 miles of seacoast, of which 3000 are within the Arctic circle, leaving only 16,500 available for commerce, or one mile of coast for each 224 square miles of surface.

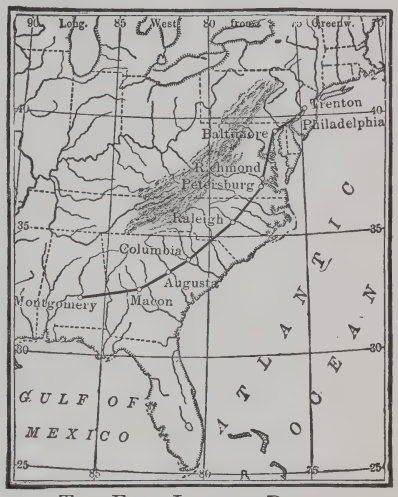
5. Water power. — In this connection should be mentioned the amount of water power available for industrial use in the United States. In colonial days this was of chief importance and determined the location of many a town. With the invention of the steam engine and the use of coal as a motive power, industry became less dependent upon water power, but with the rise of electrical appliances and the harnessing of



NAVIGABLE WATER-WAYS

The heavy lines show the navigable water-ways of the United States, in which the water is three feet deep or over. The length of these is some 18,000 miles.

our streams and falls for their service, we are beginning to value this item in our national wealth more highly. "It is probable," says Shaler, "that, measured in horse power or by manufactured products, the energy derived from the streams of this country is already more valuable than those of all other lands put together." The most valuable water powers are found east of the Mississippi River and west of the Cordilleran chain. Even in the case of the best water power there are, however, in spite of its cheapness, certain drawbacks: it must be applied where it is found, except as it is used to develop electric power, and is subject often to serious seasonal limitations. The energy which is obtained from coal, on the other hand, may be developed where it is needed, at any time and to any amount. On this account the presence of coal has proved a more important factor than water power in determining the concentration of the population and the regional distribution of industries.



THE FALL LINE OF RIVERS

Towns sprang up at the fall line of most of the rivers, owing to the presence there of water power and to the interruption to navigation at that point.

6. Coal. — Fortunately for the human race, coal is widely distributed throughout the world, although Europe and the United States to-day supply practically all the coal now mined. Professor Tarr estimates the actual coal-*producing* area in the United States at not over 50,000 square miles, of which only a small part is being worked. According to the

United States Geological Survey there are 35,000 square miles of coal-bearing strata in this country, but much of it is too thin or impure to be available for industrial use. It serves, however, in many localities as domestic fuel, and few places in the United States are far removed from burnable coal. By far the greatest part of our available supply is bituminous, the area which is underlaid with anthracite being not more than 484 square miles. Not merely in the extent of the area underlaid with coal are we favorably situated, but our superiority over Europe and the rest of the world is made more evident by a comparison of the thickness of the seams, the depth, the dip, and the cost of working. In all these respects we have an advantage.

7. Iron. — Next in importance to the fuel supplies of the United States rank its stores of iron ore. These exist in large quantity and are widely disseminated, though in the main they occupy three great fields. On the east the Appalachian field, which stretches from Newfoundland to central Alabama, contains large deposits of rather impure ore. The deposits of the Lake Superior region are extensive and of remarkable purity, and are so situated that economical methods of mining and transportation to market are possible. In the Cordilleran district there are some scattered sources of supply of iron, but owing to the distance from coal suitable for smelting, the ore remains undeveloped except for local purposes. Colorado smelts some iron ore from other States. The conditions of iron production in the United States are set forth as follows by Professor Tarr: "An iron ore, in the present state of the iron industry, must occur in a very favorable position as regards market; it must be of good quality and considerable quantity, and favorably situated for extraction and smelting. Iron is now so cheap that, where mining operations are difficult, as, for instance, where the mine is deep, the vein narrow, gangue abundant, or transportation difficult, it cannot be mined."

Iron and coal, more than any other mineral substances, form the material basis of our industrial prosperity, and in

the possession of large supplies of both, the United States is greatly blessed.

8. Other metals. — Next after iron, *copper* ranks as the most necessary metal in the industrial arts. In primitive civilizations, as among the Indians, it was especially valuable because easily worked. With the discovery of processes for smelting iron, copper lost its earlier importance, which it has regained only in the last decade or so as the result of a rapid extension in the use of electricity. The United States is the greatest copper-producing country in the world, turning out over half of the total amount. Most of it is mined in the States of Arizona, Montana, Michigan, and Utah.

Lead and *zinc* are often found associated; in the circumstances of their distribution they resemble copper, with which they are frequently found associated. In the production of both of these, the United States is surpassed by Europe. A comparatively small amount of *aluminum* is produced here, but this, with other metals, is of minor importance.

Of less total value, as well as of subordinate importance in the industrial arts, are the so-called precious metals — *gold* and *silver*. In the production of both of these, the United States ranks second, the first places being held respectively by the Transvaal and by Mexico. These metals occur in many places throughout the country, but all the important deposits are found in the Rocky Mountain region. Since the discovery of gold in California, the Appalachian deposits have remained practically unworked. California heads the list of States as a producer of gold, and Nevada of silver (1912).

9. Other minerals. — In addition to the metals some of the non-metallic mineral products of the United States should be mentioned. The country is well supplied with *building stone*, though, owing to its weight and size, the production of all but the best varieties remains local. *Phosphates*, of which large deposits exist in Florida, South Carolina, and Tennessee, and in Utah and Wyoming, and other mineral fertilizers are of growing value as the need of enriching the exhausted soil

becomes greater. *Salt* is obtained from the deposits of rock salt in New York, Kansas, and some other States, and also by the evaporation of brine in Michigan, Ohio, and New York. Structural materials, as *cements, clays, gypsum,* and *slate,* and chemical materials, as *sulphur* and *borax,* can only be mentioned.

10. Animal life. — The principal animals, as also the vegetable products, which do not constitute the original resources of the country, but are rather the results of man's efforts, will be treated elsewhere under the appropriate headings. In this connection will be noted simply the value of the native fauna. The animal life indigenous to North America had enormous economic significance to the aborigines, less to the colonists, and has scarcely any to us to-day. Of all the fauna of native origin the turkey is the only one which has been domesticated. To the Indian the wild game, such as deer, buffalo, mountain sheep, etc., were of greatest economic importance, since they furnished him with food, and the materials for clothing, shelter, weapons, and other necessaries. To the early colonist and fur trader the fur-bearing animals, such as the beaver, squirrel, mink, sable, badger, fox, and weasel, were more valuable. The presence of quantities of game in the neighboring forests was moreover of considerable importance to the colonist, as he was thus able to supply his table and vary his diet with a minimum expenditure of effort. Quantities of edible wild fowl too passed overhead every year, as pigeons, turkeys, prairie chickens, ducks, geese, quail, etc. To-day these have been practically exterminated, or a small remnant only survives under the protection of strict game laws.

Of far greater importance from an economic standpoint are the fishes, the supply of which has not been so easily reduced. The salmon of the North Pacific coast stands easily first among these; followed by the cod, mackerel, herring, and shad of the Atlantic coast; and white fish, lake herring, and sturgeon of the Great Lakes. Oysters, gathered by the Indians in immense numbers, still form the basis of a lucrative industry on the middle Atlantic coast. The exploitation of all these native

resources of the United States has proceeded recklessly and ruthlessly, and only recently has some effort been made to conserve and maintain for future generations by scientific methods our native animal and vegetable wealth.

11. The forest. — The forests of the United States cover an area of about 700 million acres, or more than 35 per cent. of the area of the country. Of these by far the greater part is found in the section east of the Mississippi, which originally was a vast continuous forest. In the northern States there stretched the great white pine forest, from which most of our lumber has come, from colonial days to the present; south of this in a broad belt lies the southern pine forest, whose most important tree is the yellow pine. In the Mississippi valley are found the hardwood forests of oaks, hickories, ashes, gums, etc. West of the Mississippi stretches a forestless, often treeless, area of millions of acres; with the Rocky Mountains begins again the coniferous interior forest, and still further west the Pacific coast forest. In this interior section the chief lack has always been water rather than wood.

" Our civilization is built on wood. From the cradle to the coffin, in some shape or other, it surrounds us as a convenience or a necessity." The early settlers drew upon the forests for food, fuel, and shelter. And yet the dense woods of the Atlantic coast, which had to be cleared before crops could be raised, and which often concealed hostile Indians and animals, were regarded rather as an obstacle than a blessing. Vast areas were ruthlessly burned down and the land denuded of its forest growth. This lavish waste of one of our most important natural resources has persisted almost down to the present time, and we are only now beginning to realize the necessity and possibility of preserving and increasing this source of wealth.

12. The fertility of the soil. — Among the valuable resources of a country should be included a good climate and a fertile soil: together, these are of great importance in promoting the welfare, prosperity, and material comfort of the people.

PHYSICAL MAP OF THE UNITED STATES

Considered as a whole, the fertility of the soil of the United States is remarkably great, but this can best be seen by describing separately the six physical regions into which the country is usually divided. Generally speaking, the dominant geographical features are two extensive plains and two great highland areas, each of which runs in a north and south direction. The six regions may be briefly described as follows:

(1) The Coastal Plain Region, although not very fertile, was the portion of the country first settled. Not more than 12,000 square miles is untillable, it is well forested, and suited to the growth of wheat, corn, tobacco, and cotton. Furnished with unrivaled water power at the falls of the rivers and splendid harbors at their mouths, this region has been the seat of many large and important cities.

(2) The Appalachian Region contains the greater part of the States of New York, Pennsylvania, West Virginia, the Carolinas, Georgia, Tennessee, Kentucky, and Ohio. "Taken altogether, this mountain system is perhaps the finest region for the uses of man that the world affords; its great length, of more than 1500 miles from north to south, gives it a range of climate such as would be had in Europe by a mountain-chain extending from Copenhagen to Rome. The total area of this Appalachian district, mountains as well as table-lands, is about 300,000 square miles. This is an area equal to near thrice the surface of Great Britain." [1]

(3) The Middle Prairie and Lake Region has an exceedingly fertile soil and an abundant rainfall; in the South, indeed, the moisture is excessive except for such plants as sugar, cotton, and rice, which form the staple crops of the lower Mississippi. The soil of the prairies is exceedingly fertile and is capable of supporting an immense population. Owing probably to glacial action the land is very level and there are no great forests in this section of the country. The natural advantages of this section for water transportation and for the cheap construction of railways are remarkable. The Missis-

[1] Shaler in Winsor: Nar. and Crit. Hist., IV, p. iv.

sippi River and its tributaries, the Ohio and the Missouri, are navigable for over 10,000 miles, while for fully half that distance they are accessible by vessels of considerable size. On the north the Great Lakes offer unrivaled facilities for water transportation, and with the " Soo, " Welland, and Erie canals afford an outlet to the ocean for the agricultural and mineral products of the Northwest.

(4) The Great Plains or Steppe Region are a treeless expanse of grass lands. As a result of deficient rainfall, agriculture is impossible except where irrigation is used or along the river bottoms. Consequently, the region is given over mainly to grazing and stock raising.

(5) The Cordilleran or Plateau Region is, next after the Himalaya system, the most extensive region of great altitude in the world. Probably nineteen-twentieths of its lands are irretrievably barren, while their great height reduces much of the land to the east to a condition of sterility. They contain, however, immense mineral wealth.

(6) The Pacific Slope Region is of great fertility, well watered, and with an exceedingly equable and attractive climate, though containing also much barren land. Unfortunately, the coast of this region is broken by few harbors or navigable rivers, and its commercial development is therefore unlikely to equal that of the less fertile Atlantic coast region: it is also separated by a wide ocean from industrially undeveloped countries.

13. Temperature. — Next in importance to the fertility of the soil may be ranked the distribution of temperature and rainfall. Temperature has both a direct influence upon man and an indirect influence through its effect upon the plant and animal life at his disposal. A cold climate seems best adapted to call forth those virtues which are helpful to economic progress. Those portions of Europe which have sent forth the most energetic peoples and have developed the highest civilization are situated between the lines of forty and seventy degrees average annual temperature. It is noteworthy that

North America is broadest in the temperate zone and tapers down to a narrow point in the tropical zone, in which respect it is the opposite of South America or Africa. The temperature of the United States is substantially the same as that of western Europe, the mean annual temperature being 53° F., though the extremes of heat and cold are much greater in this country than in Europe.

14. Rainfall. — Of not less importance than the temperature is the amount and distribution of moisture. An annual rainfall of at least 20 inches is essential to agriculture, districts with less than that being suited only to grazing, while a rainfall much exceeding 50 inches produces a rank growth harmful to most of the plants grown in the United States. The average annual rainfall of the United States is 29.6 inches; east of the one hundredth meridian, however, the average is much higher and gradually increases towards the east and southeast. West of the one hundredth meridian the rainfall decreases as one proceeds to the west and southwest, the temperature rising as the rainfall declines. About three-quarters of the population are found in the regions enjoying an annual rainfall of between 30 and 50 inches, the conditions there being most propitious for sustaining a dense population.

Climate and economic development. — Several advantages result from the possession by the United States of this varied yet well-balanced climate. Owing to the wide variations in the climate and character of the land there exists an immense variety of plant life. The danger of a general failure of our staple agricultural crops is slight, for a loss in one part of the country is almost certain to be made good in another. A certain stability is thus given to agricultural products and prices. Another advantage exists in the variety of crops which such a wide range of climate ensures. Not merely does the United States lead all countries in the production of dairy products, corn and wheat, of coal, iron, copper, lead, zinc, phosphate, sulphur, and petroleum, but the greater part of the lumber, meats, tobacco, and cotton, which enter into the world's trade

come from its forests and fields. This diversity of climate and resources has meant great diversity of occupations with attendant differences of interests, habits of living, and modes of thought. While this fact has had a certain influence in dividing the people into sections with opposing interests, on the whole it has made for broadness of view and catholicity of interests.

In its direct effect upon the race which has grown up in the new world, the environment seems to have made for a stronger and hardier people than any of those of the old world. The best available statistics on this point are probably those gathered by Dr. B. A. Gould, during the Civil War, which are based upon measurements of over 1,000,000 soldiers. The main results are briefly summarized in the following table:[1]

PHYSICAL MEASUREMENTS OF WHITE SOLDIERS (AVERAGE 21 YEARS)

	Height (in.)	Weight (lbs.)	Circumference of Chest (Inches)	
			Full Inspiration	After Inspiration
New England	67.9	139.4	36.7	34.1
Middle States (N. Y., N. J., Pa.)	67.5	140.8	37.1	34.3
Ohio and Indiana	68.4	140.8	37.5	34.9
Coast Slave States	68.2	140.9	36.6	34.2
England	66.6	137.6	36.9	34.3
France, Belgium, and Switzerland	66.5	137.8	36.8	34.3
Germany	66.7	140.3	37.1	34.7

From this it will be seen that the European stock has improved during the long residence in America, and that the American of to-day is better developed physically than his old world cousin. "When one considers all these things," says Channing, — "the climate and rainfall of the United

[1] U. S Sanitary Commission Memoirs, vol. II, pp. 104, 277, 403.

States, its physical configuration, its adaptability to the service of civilized man, its fertile soils and magnificent water powers, its inexhaustible mineral resources, and the effect of this environment on the physical body, — one must admit that the European race has gained by its transfer from its ancient home to the soil of the United States." And one must also appreciate, it may be added, the effect on their development of the remarkable environment and wonderful resources in the midst of which the American people have worked out and are working out their economic and social destiny.

SUGGESTIVE TOPICS AND QUESTIONS. CHAPTER I

1. What relation, if any, exists between the shape and distribution of the land masses of the earth and man's development? [Shaler, The United States, I, chap. 1; Winsor, Narrative and Critical History of America, IV, i.]

2. Does the configuration or situation of a locality determine the character or occupations of its inhabitants? [C. C. Adams, Commercial Geography, chaps. 2, 3.]

3. Why has the Cordilleran system been called "the curse of the continent"? Is it? [Shaler, in Winsor, Narrative and Critical History of America, IV, v.]

4. Is there any connection between the presence of forests and the amount of rainfall? [Gannett, in Bulletin of American Geographical Society, July, 1901.]

5. What effect does the Gulf Stream have upon the climate of the United States? [Patton, Natural Resources of the United States, 72; H. Gannett, "Errors in Geography," in Bulletin of American Geographical Society, July, 1901.]

6. Does it seem probable that the prairies of the United States were due to the annual burning of the grass by the Indians, in order to enlarge the pasture of the buffalo? [Shaler, Nature and Man in America, p. 184.]

7. "The world could dispense with the precious metals more easily than it could with coal and iron"; is this true? [Patton, Natural Resources of the United States, 40.]

8. Compare the known coal supply of the United States with that of other industrial nations; what conclusions may be drawn with respect to the question of industrial supremacy? [Monthly Summary of Commerce and Finance, Treasury Department, September, 1902.]

9. If the Pacific coast were well provided with harbors and navigable

rivers, is it likely that it would become commercially and industrially as important as the Atlantic seaboard?

10. As man progresses, does he become more or less dependent upon his physical environment?

SELECTED REFERENCES. CHAPTER I

*Channing: Students' History of the United States, Intro.
*Farrand: Basis of American History, chaps. 1–4.
*—— Mineral Resources of the United States.
**Shaler: The United States, I, chaps. 1–3, 7–9.
**Shaler: Nature and Man in America.
**Whitney: The United States; also in Encyclopædia, ninth edition.

Gannet: The Building of a Nation.
Patton: Natural Resources of the United States.
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Russell, I. C.: North America, chaps. 1–6.
Shaler, in Winsor's America, IV, i–xxx.
Tarr: Economic Geology of the United States, part 1, chap. 3.

NOTE.—The double asterisk denotes the best references on the subject; the single asterisk good references; books without asterisks are good, but for one reason or another are not so useful for the subject of the chapter.

CHAPTER II

AGRICULTURE AND LAND TENURE

15. Colonial occupations. — During the colonial period agriculture was the main and, except in New York and New England, the only important industry. In those sections commerce and fishing afforded other outlets for enterprise, but even there agriculture remained the most important industry until after the beginning of the nineteenth century. When the first colonists landed they were compelled to resort immediately to the raising of food supplies, to keep them from starving, and what necessity dictated at first, was found later to afford the largest returns. In the Virginia Colony misguided efforts were made at the outset to direct the energies of the colonists into other channels, especially manufactures, by legislation and the offer of prizes and bounties, but the production of the more profitable tobacco soon absorbed all the energies of the colonists. In New England, on the other hand, the effects of a sterile soil and severe climate were supplemented by the restrictive legislation of England, which, by partially depriving the colonists of a market for their agricultural staples, helped to direct their efforts to fishing, ship-building, and commerce. The same circumstances characterized, to a less degree, the occupations of the middle colonies. In all the colonies, agriculture was the foundational industry, and limited and determined manufactures and commerce, where these existed.

16. Pioneer farming. — The great attraction offered by America to the industrious settler — as by every new country — was an assured and independent existence. Owing to the quantity of free land, to be had practically for the asking, and

the great fertility of the soil, even the pioneer with little or no capital could set up for himself and earn a living from the very beginning. Clearing a few acres for corn and a garden, and building a rude house alone or with the aid of his neighbors, he could, like the Indian, eke out his existence the first year or so with the aid of gun and net. After the second or third year, by clearing more land and raising a few cattle and hogs, his living was assured; and a large family, so far from being a burden, but made his work the easier. Such a pioneer farm, as were most of those in the northern colonies, was almost self-sufficing, producing practically everything needed in the household. All the necessary food, as well as flax, wool, and hemp for clothing, leather for shoes, lumber for building, were raised at home. The few things not thus produced, such as salt, sugar, tea, coffee, and iron implements, could be purchased with the surplus produce. Unless situated on a river, with easy access to a market, there was little or no money profit in such an undertaking; the average colonial farmer handled little ready cash in the course of his life

In the South the character of the staple products — tobacco, rice, indigo — demanded considerable capital, and consequently the lands fell into the hands of a wealthier set of proprietors. But even here the small farmer, without the necessary capital to buy slaves or a large plantation, was able to support himself in comfort, if not in luxury. The interior counties of all the southern colonies saw a considerable settlement of these yeoman farmers.

17. A Jack of all trades. — While practically every man in the early colonial period was a farmer, every farmer was at times also hunter and trapper, lumberman, or sailor. The pioneer settler, as later the frontiersman, supplemented his efforts in the fields by hunting and fishing as long as game abounded. Both for personal use and for sale for cash or supplies furs were in constant demand. With the growth of settlements and the disappearance of wild game, the colonist devoted his spare time to getting out rough lumber products,

such as planks, staves, and shingles. These could be made during the long winter months, by the fireside of an evening, while the women spun or wove. On the coast ships were built, and from every New England town many a farmer's boy went on the fishing expeditions to the Newfoundland Banks. It was not long before these industries became so important as to call for the full time of those who pursued them. With the growth of towns, there was increasing opportunity also for division of occupations, but the farmer in the rural districts had to be a Jack of all trades throughout the whole colonial period. Even in the towns a man was accustomed to turn his hand to almost anything that offered. Weeden gives an account of one John Marshall, who was a good typical specimen of such laborers. He " received about 4 shillings a day at Braintree from 1697 to 1711. He farmed a little, made laths in the winter, was painter and carpenter, was messenger, and burned bricks, bought and sold live stock. He was a non-commissioned officer in the Braintree Company, and a constable of the precinct. In one day he could make 300 laths."

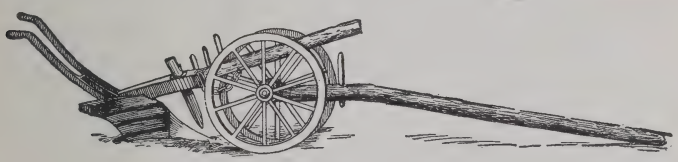
18. **Agriculture of Europe.** — We shall obtain the fairest picture of colonial agriculture if we notice briefly its development in Europe at the time when America was settled; for the general equipment of knowledge and implements with which the colonists began their work in this country determined their immediate advance. The principal cultivated plants of Europe, and more particularly Great Britain, at the beginning of the seventeenth century were few: wheat, barley, oats, rye, beans, peas, vetches, onions, cabbages, and apples. The list of tools was still shorter: those drawn by domestic animals were the plow, harrow, and cart; of hand implements, there were the sickle, hoe, and spade, essentially the same as had been used by the Egyptians four thousand years before; the flail and fanning mill, and the ax, completed the list. But simultaneously with the settlement of America there began a wonderful improvement in the agriculture of Great Britain through the introduction of the turnip and other root crops,

the clovers and artificial grasses. These made possible a more scientific rotation of crops and the abandonment of the wasteful two-field and three-field system. This improvement in British agriculture continued for over a century, from about 1600 to 1732, and emigrants to America during this period brought with them the results of these advances.

19. Indian agriculture. — The colonists were also the beneficiaries of the knowledge of the Indians, from whom they rapidly learned the best methods of raising the indigenous crops, as well as economical methods of clearing and preparing the land for cultivation. As the early colonists practically adopted the Indian methods a description of these will serve as a picture of primitive colonial agriculture. Localities naturally devoid of trees were selected for cultivation where possible, or partial clearings were made in the forest by killing the trees, either by girdling them with stone axes or by building fires around their bases. When they fell, they were burned into suitable lengths, rolled into a heap, and reduced to ashes; in this way the land was cleared with a minimum of labor. It was estimated that an industrious woman could burn off as many dry fallen trees in a day as a strong man could cut with a steel ax in two or three days. Even before the deadened trees fell the underbrush was cleared off and the corn planted amid the standing trunks. The corn was planted in rows, and a dead fish often dropped as a fertilizer into the hole with the kernels; later it was hilled a foot or two high, and beans and pumpkins planted between the rows. This primitive agriculture was not merely rude; it was extremely wasteful and disorderly. But it had the merit of yielding quick and fairly large immediate returns for a minimum of labor expended, and on this account was largely employed by the early colonists.

20. Colonial methods of farming. — The processes and methods of farming were primitive and traditional during the whole of the colonial period. Custom and often superstition controlled every step, and there was little or no advance made after the middle of the eighteenth century, when agriculture

had probably fallen to its lowest ebb. Rotation of crops was unknown and manures were but little used. The Swedish traveler Kalm, writing of the James River Colony in 1748–9, said, "They make scarce any manure for their corn-fields, but when one piece of ground has been exhausted by continual cropping, they clear and cultivate another piece of fresh land, and when that is exhausted proceed to a third." Near the



A Colonial Wheel Plow of 1748

The plow, which was clumsy and short, was sometimes attached to a pair of wheels. The ill-shaped share and mold-board did not plow deep or straight, and great strength and skill were necessary to guide the plow. "The wheels upon which the plow-beam is placed, are as thick as the wheels of a cart, and all the woodwork is so clumsily made that it requires a horse to draw the plow along a smooth field." (Kalm, "Travels in No. Amer.," II, 195).

seacoast, indeed, they did fertilize their crops by planting fish with the grain, as they had been taught by the Indians, but this was not everywhere possible.

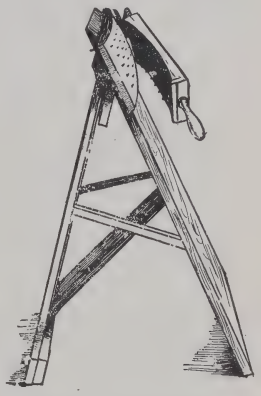
Contemporary critics invariably called attention to the wasteful and unintelligent methods of agriculture practised in all the colonies. The author of "American Husbandry," writing just before the Revolution, criticises severely the general practice of exhausting the land by planting the same crop year after year: "they have not a just idea of the importance of throwing their crops into a proper arrangement, so as one may be a preparation for another, and thereby saving the barren expence of a mere fallow." He complains of the lack of enclosed fields to keep out the cattle, of the insufficient and slovenly tillage — "worse ploughing is nowhere to be seen," — and finally of the poorness of their implements. On the other hand, it must be remembered that the soil was extremely rich and did not require very careful tillage to yield

large returns. And when the productiveness of the soil was reduced it was cheaper to take up fresh land, of which there were practically unlimited quantities, than to restore the exhausted qualities. In the colonies labor was the most expensive factor in production and everything was done to economize in its expenditure; land, on the other hand, was cheap and was used prodigally. From the standpoint of the colonial farmer this was good agriculture, but it shocked the traveler from abroad who was accustomed to an agriculture based upon dear land and cheap labor. While it was not possible to apply European standards to the totally different conditions in America, still it must be admitted that this process of "earth-butchery" led to bad habits and was ultimately wasteful — a fact to which the country has only recently awakened.

21. Experimentation and adaptation. — The first great task of the colonists was that of clearing the land and subduing the forces of nature; the second was to ascertain what crops were best suited to the new conditions. The problems presented to the colonists in the growing of crops were many and peculiar. They came to a country whose climate and soil were unfamiliar to them. The qualities of the native plants with which they were confronted had to be determined by experience. Seeds and plants from every part of Europe and even from Asia and the West Indies, which were brought here by settlers, had first to be tried in each colony before it was known in what soil or clime they would best flourish. For a century and a half this process of experimentation, adaptation, naturalization, and selection continued in all the American colonies, and so successfully that in the next one hundred years only a single commercially important new plant, namely sorghum, was introduced into the United States, and that about the middle of the nineteenth century. Hemp, indigo, rice, cotton, madder, millet, spelt, lentils, lucerne, sainfoin, were tried and failed in New England. In the southern colonies wine and silk culture, and such products as figs,

oranges, olives, cinnamon, and allspice, were tried, but were found unsuited to that climate. On the other hand, many European crops proved to be especially adapted to the new environment and have become fully acclimatized. There was, however, practically no improvement in the plants, vegetables, and fruits by culture and selection, after they were once introduced, except in the case of tobacco, rice, and indigo, the quality and preparation for market of which were all greatly improved.

22. **Native plants.** — To the early settlers the indigenous plants which they found in the new world were of far greater importance than those which they brought with them. Of these, by far the most important at the time and in the subsequent history of the country was *maize* or Indian corn. The advantages of this grain lay not merely in the speedy maturity, the large yield, the independence of seasonal changes, and the usefulness of all parts of the plant, but especially in the ease with which it was cultivated. The early settlers soon learned from the Indians the trick of planting it among the deadened forest trees, without plowing, with the pumpkin between the hills. Without this grain the early settlements would have been much more difficult of establishment. Maize, indeed, formed the main food crop of the colonists throughout their entire history.



Hand Corn Sheller

To shell corn from the ears was one of the tasks carried on in colonial times during the long winter evenings. It was usually done by scraping the ears on the iron edge of the shovel or the handle of a frying-pan, but sometimes primitive hand-machines were used.

Of considerable consequence also was the *potato*, both sweet and white. The food value and methods of cooking the former were early learned from the Indians, and the sweet

potato was in general use throughout the southern colonies. While the early history is somewhat obscure, it seems certain that the white potato was carried from Peru or Chile, where it was indigenous, into Spain about the middle of the sixteenth century. From that country its use spread throughout Europe, and it was introduced from Ireland into North America by the colonists about 1718. Since that time it has been an article of general consumption, although it has not occupied such an important place in this country as in the European dietary. The early use was retarded by the superstition that if a person ate potatoes every day he would not live longer than seven years; they were called "Devil's apples."

Timothy is another distinctively American plant, its cultivation having begun about 1720. A few years later it was introduced into England from this country. This plant was of vast economic importance in the northern portions of the United States, where it was necessary to feed live stock during the winter upon hay gathered during the summer months. In the earlier colonial period cattle often starved to death in the long, severe winter, owing to a scarcity of food.

Among other plants which the early colonists found, and which had an important effect upon their dietary, should be mentioned the *pumpkin, squash,* and probably also the *strawberry.*

23. Tobacco. — Of all America's gifts to the old world the most widely accepted has been *tobacco.* It was mentioned in Columbus's diary for November 20, 1492, and is commonly understood to have been introduced from America into England by Sir John Hawkins about 1565. It soon came into general use and was made the object of regulation by successive English monarchs. In 1624 it became a royal monopoly, and in 1624, 1628, and again in 1631, the cultivation of the plant in England was forbidden, thus giving the colonial planters a monopoly of the British market. About 1616 its serious cultivation began in Virginia, and from that time increased rapidly, until it had displaced all other crops and most other

forms of industry. From the very beginning tobacco was one of the greatest articles of export from the North American colonies, constituting between one fourth and one half of all the exports during the colonial period. Tobacco combined a high value with a small bulk, and was thus well suited for export, as the cost of transportation was small in comparison with its value. The first shipment, in 1619, amounted to 20,000 pounds; in the ten years 1700 to 1709 the average

TOBACCO FIELD

Tobacco is grown in many parts of the United States, from southern Wisconsin to Louisiana, but the largest tobacco area, about 600 miles long and 400 miles wide, extends from Kentucky to Maryland, and from central Ohio to North Carolina. The illustration shows a modern tobacco field of the best type, as is evidenced by the size of the plants. The head of the plant to the left of the man is tied up in white paper to catch the seed.

annual export was 28,958,666 pounds; by 1775, 85,000,000 pounds were exported annually, whose value was about $4,000,000.

The production of tobacco was carried on in a very wasteful manner: the land was cleared by girdling the trees and was then planted in tobacco for three years and afterwards in corn.

As artificial fertilizing was not resorted to, this method resulted in exhaustion of the soil in from three to eight years, when fresh land had to be taken up. The population was consequently widely dispersed, the plantations of Virginia in 1685 covering an area as large as England itself.

24. Other plants. — The principal European grains and fruits were early introduced into the colonies, and their cultivation proceeded side by side with those of native origin. Indeed, the majority of the plants of great economic value to-day are of foreign origin. Next to maize the principal crops of the North were rye and buckwheat, and following these wheat, oats, and some barley. The culture of wheat was given special attention and met with considerable success in the middle colonies. In the southern colonies, after tobacco, rice was the most important crop. Introduced into South Carolina in 1694, it grew abundantly; by 1724, 100,000 barrels were exported from that colony alone, and in 1761, when the white population was not more than 45,000, the value of the rice crop was over $1,500,000. Little cotton was produced during this period, but indigo, which was first successfully planted in 1741, was of considerable importance; in the last decade before the Revolution, South Carolina alone exported 500,000 pounds a year, worth from two to five shillings a pound. Various fruits were early brought over from Europe, and grown wherever climate and soil were favorable, of which apples and pears were the most common; in addition to these were stores of wild fruits, as plums, grapes, and cherries, and berries and nuts to be had for the gathering.

The following table[1] gives a partial list of plants of American origin:

[1] Hunt, Lectures on History of Agriculture, 99.

	Very ancient cultivation in America	Cultivated before discovery of America, but of no great antiquity	Cultivated only since discovery of America
Cultivated for underground parts	Sweet potato	Jerusalem artichoke Potato	
Cultivated for stem and leaves	Tobacco	American aloe	Quinine Timothy Orchard grass
Cultivated for fruit		Pumpkin Squash Red pepper Tomato Pineapple	Strawberry [Cranberry?]
Cultivated for seeds	Maize	Sugar bean Barbadoes cotton Peanut	

In general the principal agricultural products of the colonies were as follows: New England and the middle colonies, corn, rye, oats, buckwheat, wheat, and barley, with some tobacco from Connecticut; Maryland and Virginia, tobacco; the Carolinas, tobacco, rice, indigo, corn, and a little cotton; Georgia, rice and indigo. Wool, flax, and hemp were also raised in considerable quantities for home use in the different colonies, as were the more common vegetables such as turnips, onions, peas, carrots, parsnips, pumpkins, and cucumbers.

25. Live stock.— European cattle were imported into Spanish, French, and English colonies at a very early date, and increased very rapidly, especially in the South and Southwest. The cattle brought over from England were much smaller than our present stock. According to Prothero, the average size of cattle and sheep sold in Smithfield market, London, as late as 1710, was: beeves, 370 lbs.; calves, 50 lbs.; sheep, 28 lbs.; lambs, 18 lbs. The reason for the small size was that little or no attention was paid to the culture of grasses and vegetables for feeding the stock; they were left to

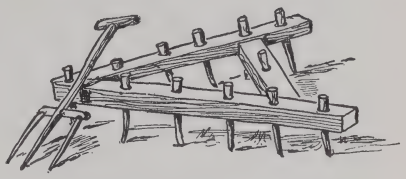
graze, winter and summer. In 1795, after the general introduction into England of root crops and artificial grasses and clovers, the weights in London were: beeves, 800 lbs.; calves, 148 lbs.; sheep 80 lbs.; lambs, 50 lbs.

The severe climate of New England caused a deterioration in the stock of that section; in the southern colonies, where they were turned loose in the forests, they multiplied rapidly. The author of "American Husbandry" reserved his severest criticism for this feature of American farming: "Most of the farmers in this country are, in whatever concerns cattle, the most ignorant set of men in the world. Nor do I know of any country in which animals are worse treated. Horses are in general, even valuable ones, worked hard and starved: they plough, cart, and ride them to death, at the same time that they give very little heed to their food; after the hardest day's work, all the nourishment they are like to have is to be turned into a wood, where the shoots and weeds form the chief of the pasture; unless it be after the hay is in, when they get a share of the after-grass. . . . This bad treatment extends to draft oxen; to their cows, sheep and swine."

By 1639, the Jamestown Colony, in spite of this bad treatment, already had 30,000 cattle; in 1770, Wynne described the large herds, often numbering a thousand cattle, that were found in the Carolinas. Cattle-raising was an important frontier industry in many of the colonies, and dairy products were yielded in all of them for home use. Considerable quantities of butter and cheese were produced in New Jersey for export. Hogs multiplied rapidly, especially in the Southern colonies, where they ran at large in the forests. As a result there grew up a considerable export of pork; and Virginia hams and bacon came thus early to have a high reputation. Of animal food there were also, in addition to domesticated animals, plentiful supplies of wild game and fish in all the colonies.

26. Farm implements. — One of the greatest obstacles to agricultural progress was the scarcity and rudeness of the

farming implements which the colonists possessed. Plows were imported from time to time, but they were extremely heavy and unwieldy. In 1637, there were but 37 plows in the colony of Massachusetts Bay, and towns often paid a bounty to any one who would keep a plow in repair, in order to do the plowing for the community. Virginia was rather better off in this respect, having 150 plows in 1648. The massive old wooden plow, with mold-board of wood, required frequently four oxen and three men to manage it. In addition to this implement, the colonists had the spade, a clumsy wooden fork, and now and then a harrow. All of these were rudely made of wood; the only metal available was made of bog iron ore, which was very brittle and made the implement liable to break in the middle of a day's work. The grain was cut with a sickle or "hook" and was usually separated from the chaff in the southern provinces by the treading of horses on threshing-floors; in the North the flail, though slower, was more generally used. Hay and straw were raked and pitched by hand-rakes and forks made entirely of wood. Methods of farm transportation developed slowly, owing to the bad roads. Skids were sometimes used, and two-wheeled carts were common; a cart-wheel shod with iron was a prized possession.



WOODEN HARROW AND FORK

The harrow was triangular, and yoked with one of the angles forward in order to pass more easily around stumps of trees and other obstacles. The teeth of the harrow, as well as the fork, were made entirely of wood.

27. Appropriation of the land.—The claims of the European nations to the lands of the New World were based upon priority of discovery and exploration, of conquest, and of settlement. Of these the last named was the most important and the decisive factor in giving title. Thus the papal bull dividing the newly discovered lands between Spain and

Portugal did not deter other nations from taking possession of territory which they wished. Nor was greater regard paid to the rights of the original possessors of the land, the Indians. Some of the proprietors, like William Penn, or the states, like New York, made treaties with the Indians, by which these ceded their possessions to the white man; and after the establishment of the union the federal government was always careful to make treaties with the Indian tribes in which cessions of the land were made. But the early settlers were usually satisfied with titles to ownership based upon royal grants, and did not inquire too closely into the right of the European monarchs to claim and dispose of the land.

28. **Land tenures.** — At the time of the settlement of North America, land in Europe was still generally held on feudal tenures, and the possession of land carried with it both social and economic privileges. The land system was a most intricate one, and land could be transferred only by elaborate feudal methods, while the rights of inheritance and bequest were still further limited. Ownership vested in a few, and not even the greatest thrift could obtain for the poor man a farm of his own. But land in a new country, where it could be had almost for the asking, soon came to be held and transferred like any other species of property, and ownership of it conferred no special rights, except as it was generally made a condition to office-holding or the franchise. In some, especially the proprietary colonies, large estates were created whose proprietors enjoyed special privileges, while it was also made difficult for small cultivators to obtain land.

The prevailing theory in England was that the title to land in America was vested in the crown, and from him all subsequent rights were derived. By grant from the crown land passed to chartered companies and to proprietors and was by them regranted to individuals, while in the royal provinces the governors were given authority to make grants of land directly. By one way or another the land passed into the

possession of the actual cultivator. Many of the grants, especially those to the proprietors, were made under some form of feudal tenure, such as the exaction of an annual quit-rent. This followed from the theory that the king could not alienate the property of the crown and that the proprietor was really a tenant. When the proprietors in turn regranted the land, they also exacted a quit-rent which, though it was generally merely nominal, also proved a troublesome feature. The Revolution, however, swept away practically all traces of feudal land tenure or of feudal land laws.

29. Land-holding in New England and the middle colonies. — When the first settlement was made, the Pilgrims held their land and other property on a communal basis, turning their labor and products into a common pool, but a few years of failure caused the abandonment of this plan, as had been the case several years before in Virginia. Each of the original or new settlers was granted a certain number of acres as his share in the colony. Large estates never became the rule in New England, but small farms were typical, owing largely to the character of the soil and the crops, which necessitated careful cultivation. Throughout the whole section, and as far south as Delaware, communal holdings in the towns were also found; fields — usually three — were at first held in common, and the cultivation was decided each year in general meeting. Later, as the towns filled up and grew strong enough to protect outlying fields against raids, the arable meadow and wood land was divided.

In the middle colonies, the land system was practically the same as in New England, both in character and results. Small farms held in fee simple were the rule. The only exception lay in the large manorial grants made by the Dutch and confirmed and extended by the early English governors in New York. The manorial system, however, was restricted to the valley of the Hudson, and the large estates of from 50,000 to even 1,000,000 acres lay in large part uncultivated until they were broken up into small holdings. The type of

agriculture in the northern colonies as a whole, however, was self-sufficing, aiming to supply only the wants of the colonists, as little demand existed abroad for their grain. This self-sufficing system made necessary a large number of small farms worked by their owners, and these in turn produced a democratic type of society.

30. The plantations of the South. — While small farms were characteristic of the North, large plantations were in vogue in the South, though in both sections there were exceptions to the general rule. These large landed estates were owned by comparatively few proprietors, who constituted an aristocratic upper class in a strongly stratified society. The difference between New England and the South was mainly the result of economic causes: the fertile soil and the presence of a few staples for which there was a good market abroad, and which lent themselves to intensive cultivation, made the large plantation profitable in the southern colonies. They consequently devoted themselves to the production of tobacco, rice, indigo, and sugar cane, and developed a commercial type of agriculture, which demanded a large supply of cheap labor. The average size of the Virginia estate was about 5000 acres, while in New England the average farm was probably not far from 100 acres. On the other hand, in the seventeenth century, the value of an acre of New England land was about fourteen times that of an acre in Virginia.

The law and practice regarding grants and inheritance was also partly responsible for the enormous estates of Virginia and of other colonies. Grants were made to the companies and "adventurers," who undertook to establish colonies; as "head right" for the importation of settlers; to the settlers themselves; for meritorious service, to clergymen, physicians, and even to servants; or as gifts for purely personal reasons. The occupation of the land granted and the payment of a small annual quit-rent were the usual conditions to the issuance of a patent or title deed.

Inheritance in the southern colonies, as also in New York,

followed the law of primogeniture; the principle of entail was even more strictly applied in these colonies than in England. In New England and Pennsylvannia, while the right of the eldest son was still recognized, he received only a double portion, the rest of the property being divided equally among the other children. Primogeniture and entail were not abolished entirely until the Revolution.

SUGGESTIVE TOPICS AND QUESTIONS. CHAPTER II

The problems presented to the colonists in connection with agriculture were several. The one first solved was how to raise the necessary food supplies; then came those of determining the best crops for each section and the most profitable methods of production, and of obtaining the necessary capital in the form of farm implements. Finally, the best methods of distributing and granting title to the land were worked out.

1. What were the characteristics of land tenure in feudal times? [W. D. P. Bliss, Encycl. of Soc. Ref., art. Land; A. R. Wallace, Land Nationalization, 22–25; E. de Leveleye, Primitive Property.]

2. What objections are there to primogeniture and entail. [J. S. Mill, Princ. of Pol. Econ., book 2, chap. 3; Bliss, Encycl. of Soc. Ref., art. Entail; R. H. I. Palgrave, Dict. of Pol. Econ.]

3. Describe the two-field and three-field systems of agriculture in Europe. [L. L. Price, Engl. Com. and Ind. 25, 102; W. Cunningham, Outlines, 172–174; G. T. Warner, Landmarks, 20, 27; E. P. Cheyney, Introduction, 36.]

4. Compare the life of a tenant farmer in England with that of a free farmer in the colonies. [A. Brown, Genesis of U. S., I, 252, 352, 506, 688; American Husbandry, I, 122, 190–191.]

5. Is "earth-butchery" still practised in the United States?

6. Do you know of any plants that have been tried and have failed to grow in your locality? Why?

7. Where did the herds of horses which the later western pioneers found on the prairies come from. What was the origin of the so-called "native" cattle?

8. Describe the treatment of the Indians in the acquisition of title to land by the whites. [P. A. Bruce, I, 487–499.]

9. Why did the attempts at communalism fail at Jamestown and Plymouth? [J. Fiske, Old Va. and Her Neighbors, I, chap. 4; H. L. Osgood, Amer. Col. in XVIIth Cent., I, part 1, chaps. 3, 5; A. Brown, Genesis of U. S., I, 402–413.]

10. Was it wise for the early colonists to kill and burn the forests?

11. Where were the forests most extensive? [N. S. Shaler, in J. Winsor, Hist. of Amer., IV, xiv.]

12. Describe the attempts of the colonists to produce wine, silk, etc. [J. L. Bishop, Hist. of Amer. Manufactures, I, *passim*.]

13. Compare the native edible plants, and animals capable of domestication, in the old and new worlds. [Shaler, Nature and Man in America, 145.]

14. How did the colonists gain title to their land? Was the same true in all colonies? [K. Coman, 28, 32–38; Bruce, I, 502–519; Osgood, Amer. Col. in XVIIth Cent., I, part 2, chap. 11.]

15. What effect has the cultivation of tobacco had upon the economic organization of Virginia? [K. Coman, 56–57; Bruce, I, chap. 7; Fiske, Old Va. and Her Neighbors, I, 223–231, II, 184–220; J. C. Ballagh, Land Syst. of So., 117–119.]

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CHAPTER III

COTTON AND SLAVERY. AGRICULTURE

31. The introduction of cotton culture. — Up to the time of the Revolution the culture of cotton had remained practically undeveloped. Other products, as tobacco in Virginia, rice in South Carolina, and pitch and tar in North Carolina, had proven more profitable. Under the English colonial system, moreover, cotton manufacturing for export was forbidden in North America. Even more important was the difficulty and expensiveness of cleaning the fiber from seed and impurities. According to Whitney a man could separate the seed by hand from only about one pound of lint of the short staple variety, or about ten pounds of the sea island cotton, in a day, which made the cost of cotton goods prohibitive for general use.

With the outbreak of the Revolution and the consequent demand for garments, together with the removal of colonial restrictions and the encouragement to manufactures, considerable stimulus was given to cotton production. Sea-island or long-staple cotton was introduced into the lowlands of South Carolina and Georgia in 1786, and proved well adapted to conditions there, so that its production increased rapidly. It could be cleaned of its seed by a simple roller gin; but the area suitable for growing it was limited, and attention was next directed to the development of the short-staple or "upland" cotton on the interior lands. By 1789 the production of both varieties was estimated by Woodbury at 1,000,000 lbs.; in 1790 at 1,500,000 lbs.; and in 1791 at 2,000,000 lbs. Of this South Carolina produced three fourths and Georgia most of the rest. At the same time, the improvements in cotton machinery in England had created a vastly increased

market for raw cotton, the number of persons engaged in the spinning and weaving of cotton having increased from 7900 in 1760 to 320,000 in 1787.

32. Whitney's cotton-gin. — The way was now open for the rapid development of cotton culture in the South; the only obstacle was the difficulty of cleaning the fiber. In 1792 Eli Whitney, a Connecticut school teacher, while visiting in Georgia, had his attention directed to the need of a machine for doing this work, and in April, 1793, succeeded in perfecting a cotton-gin by which the lint was picked from the seed by means of saw-teeth on a revolving wheel. By this machine three hundred pounds of cotton could be cleaned by one person in a day, and immediately the demand for it spread throughout the entire cotton region. Mr. Whitney and the partner he associated with him, Mr. Miller, made the mistake of endeavoring to monopolize the production and sale of the gins, but the planters would not wait for such a valuable invention to be supplied so slowly, and soon invaded his patents. The State of South Carolina granted him $50,000 to secure the privilege of the gin for her citizens, and North Carolina about $12,000, most of which was soon spent in wasteful law-suits.

ELI WHITNEY

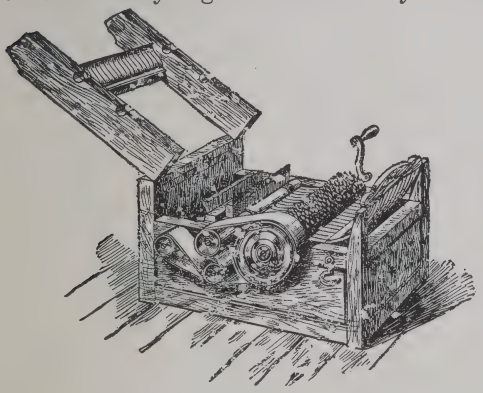
Whitney was born in Massachusetts in 1765 and graduated from Yale College in 1792. He then went to Georgia as a teacher and while there was asked by the neighbors, because of his known ingenuity, to make a machine for them that would clean the seed from the cotton, which at that time was done by hand. His efforts resulted in the cotton-gin, the most important machine ever invented in the United States. His patents were invaded and he made nothing from this invention, though later he acquired a fortune from the invention of firearms.

After the invention of the cotton-gin, American cotton, which had been dirty and poorly picked up to this time, became a popular and marketable commodity. The production and export increased by leaps and bounds, as will be seen from the appended table.

PRODUCTION AND EXPORTS OF COTTON

Year	Production in United States (in lbs.)	Exports from United States (in lbs.)	Price per lb. (in cents)
1790	1,500,000	.....	14½
1795	8,000,000	6,276,300	36½
1800	35,000,000	17,789,803	28
1805	70,000,000	38,390,087	23
1807	80,000,000	63,944,459	21½
1810	89,000,000	93,261,462	16

So rapid indeed was the development of this new industry that when Jay negotiated the treaty of 1794 with Great Britain he apparently did not know that cotton was raised for exportation in the United States; he accordingly included it among the articles not to be exported from the United States in American bottoms. The Senate, however, did not agree to this provision.



WHITNEY'S COTTON-GIN

Until Whitney's invention the seeds had been removed from the cotton either by hand or by the roller mill. Now the cotton was forced by toothed cylinders through wire ribs, which separated the seeds from the lint. In a day a slave could clean by hand 1, by the roller mill 10, and by the cotton-gin 200 pounds of cotton.

33. Decline of slavery. — After the Revolution, slavery declined,

not only in the North, where by 1804 legislation had been passed in all the States providing for its ultimate abolition, but in the South also. Except on the rice and indigo plantations of the Carolinas and Georgia the economic disadvantages of slave labor were so apparent that many prominent Southerners favored its early abolition. By 1796 Virginia, South Carolina, Georgia, North Carolina, and Maryland, of the southern States, had all forbidden the importation of slaves. Indeed, so far had the movement towards the extinction of slavery proceeded by 1794, that Tench Coxe was able to write in that year: "The separate American states (with one small exception) have abolished the slave-trade, and they have in some instances abolished negro slavery; in others they have adopted efficacious measures for its certain but gradual abolition. The importation of slaves is discontinued, and can never be renewed so as to interrupt the peace of Africa, or endanger the tranquillity of the United States." Even from Georgia came the statement by a representative in the fifth Congress: "Not a man in Georgia but wishes there were no slaves; they are a curse to the country." The fall of the price of slaves was a further evidence of the growing unprofitableness of slavery: in 1790 the best hands could be bought for two hundred dollars each.

The following quotation from the journal of Philip Fithian, a Princeton student and a tutor to a rich family in Virginia in 1774, gives an enlightened view of slave labor on a great plantation during this period: "After supper I had a long conversation with Mrs. Carter concerning Negroes in Virginia, and find she esteems their value at no higher rate than I do. We both concluded (I am pretty certain that the conclusion is just) that if in Mr. Carter's, or in any Gentleman's estate, all the Negroes should be sold, and the money put to interest in safe hands, and let the land which these Negroes now work lie wholly uncultivated, the bare interest of the price of the Negroes would be a much greater yearly income than what is

now received from their working the Lands, making no allowances at all for the risk of the Masters as to the crops, and Negroes." It is probable that, but for the invention of the cotton-gin and the consequent extension of cotton production, slavery would gradually have declined and disappeared through voluntary action.

34. Effect of cotton culture on slavery. — With the first development of cotton-growing, white labor was resorted to and was expected to prove adequate. The scarcity of such labor in the South, however, led to an early recourse to the use of slaves. The large slave-holders, too, eagerly seized the opportunity afforded by a new crop to employ their slaves in its production, for the former staple southern crops — indigo and rice — were declining in importance. As soon as the culture of cotton was undertaken by slaves on an extended scale, the social odium attaching to manual labor by a white man diminished still more the supply of free labor, and made cotton from that time on essentially a slave product. The same causes operated to repel immigrants from the southern cotton-fields, and made the South more and more dependent upon slave labor as the production of cotton became more important. The white farmers, who might have grown the cotton, either bought slaves themselves and became planters, or, tempted by the high prices at which they could sell their land, parted with their holdings and moved to the cheaper land on the frontier.

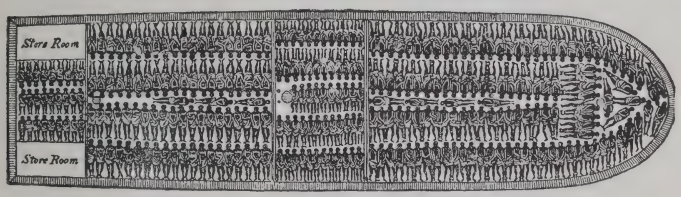
It has been frequently asserted by southern writers that the success of cotton culture depended upon the existence of a supply of slave labor, and that the two were indissolubly connected. While the introduction of slave labor into the United States had, as we have seen, no connection with the production of cotton, it is true that the development of cotton culture at this time gave new life to a decaying institution and furnished it with an economic reason for existence during the next half-century. But cotton would have been grown with free white labor, if slave labor had not been available.

35. Extension of cotton culture. — The movement towards abolition of slavery received a fatal check as soon as the cultivation of cotton was shown to be profitable in the South. The demand for slaves increased with the extension of cotton culture, and "side by side slavery and cotton pushed westward into the 'back country' of the Carolinas, across the pine hills and prairies of Georgia and Alabama, took complete possession of the alluvial lands along the Mississippi and Red rivers, and by 1860 were laying claim to the great central region of Texas." At the beginning, in 1791, South Carolina and Georgia were the only important cotton-producing States. By 1801 Virginia, North Carolina, and Tennessee produced a scant quarter, and ten years later Louisiana added a little to the total production, but South Carolina and Georgia still produced three fourths of the cotton grown in the United States.

The rapid rise in the price of cotton during this period greatly stimulated its production: from 14¼ cents a pound in 1790 the price steadily rose to 44 cents in 1799, owing to the increasing demand in England and at home; after this it declined to 19 cents in 1802, near which point it remained for the next six years. The stimulus thus given to the extension of cotton culture may be judged when these prices are compared with the estimate of Woodbury that where lands and labor were low, 2 cents a pound for cotton in the seed, or 8 cents when cleaned, would pay expenses. The production of cotton consequently increased from two million pounds in 1791 to forty-eight millions in 1801, and to eighty millions in 1807, while the exports rose from less than two hundred thousand pounds to twenty-one million and sixty-four million pounds respectively, for the same dates.

36. Growth of the slave-trade. — The increased demand for slaves to be used as hands in the cotton-fields led at first to an extension of the slave-trade and to fresh importations from Africa. Although the separate States had forbidden the traffic, the profits were so enormous as to encourage the growth of a vast illicit business. Finally, in December, 1803, South

Carolina, influenced no doubt by the great gains to be secured, repealed all prohibitory laws and threw open her ports to the slave-trade. Charleston became the most important slave-mart in the United States, and grew rapidly in wealth and importance; in size it was the fourth largest city and seemed destined for a brilliant future. New England traders carried on a large share of the traffic, and slave-ships were fitted out in Boston and New York; the voyages were usually made



Deck Plan of a Slave-Ship

The men were ironed in pairs by the ankles, and men and women were compelled to lie on their backs on the deck with their feet outward, the irons on the men being usually fastened to the deck. The space "between decks" where they were confined was about 3 feet 10 inches high, and packed so close that a space of only 6 feet long and 16 inches wide was allotted to each slave. Here they remained while the human cargo was being collected (3 to 6 months) and during the passage across the Atlantic (6 to 10 weeks). In a tropical climate and under these conditions the mortality was frightful.

under the flag of a foreign nation. From 1804 to 1807 inclusive two hundred and two cargoes of negro slaves were taken into Charleston; of these, 8488 were sold for account of persons living in Rhode Island, Massachusetts, and Connecticut. On January 1, 1808, the constitutional restriction upon federal interference would expire, and on March 2, 1807, Congress by law prohibited the importation of slaves. The act was disregarded, however, as the punishment was insufficient — illegally imported slaves if captured were sold for the benefit of the State into which they were being brought — and a considerable illicit trade continued. Not until 1820 was the traffic made piracy, the penalty for which was death.

The restriction of the slave-trade, together with the growing demand for slave labor, forced up the price of slaves, which by 1815 was two hundred and fifty dollars a head. This demand was met by the sale of the slaves from the exhausted tobacco plantations of the border States; they were sent to the cotton regions by the tens of thousands.

37. Agriculture in the South. — The agricultural methods employed in this period were those which had come down from colonial days and were a wasteful kind of extensive agriculture. The land was cleared for cotton, as it had been for tobacco and corn, by girdling the trees and then burning them as they decayed and fell. Before the fields were ready for cotton a few crops of Indian corn or wheat would often be gathered. The ground was prepared and cultivated in a very primitive fashion, but few agricultural implements being used and those only of the rudest and strongest kind, such as even the most careless slave could not break. Fertilizers were but rarely used, not even the cotton seeds being returned to the soil, while rotation of crops was unknown.

Although cotton is said to be the least exhaustive to the soil of the great staple crops of America, such methods rapidly wore out the land. "Agriculture in the South," said John Taylor of Carolina, "does not consist so much in cultivating land as in killing it." The land was used until exhausted and then deserted for a fresh piece. Owing to the ease of moving his slaves, which constituted the greater part of his capital, the planter was ever ready to move on. It is evident that such a one-crop system required unlimited quantities of land, and this fact explains the steady westward movement of cotton culture for the next fifty years. How far the use of slave labor was responsible for the wasteful character of agriculture in the cotton regions it is impossible to say, but the relation between the two was intimate and southern agriculture showed no improvement until after the Civil War.

38. Agriculture in the North. — Little progress was made in agriculture until after the Revolution; this event directly

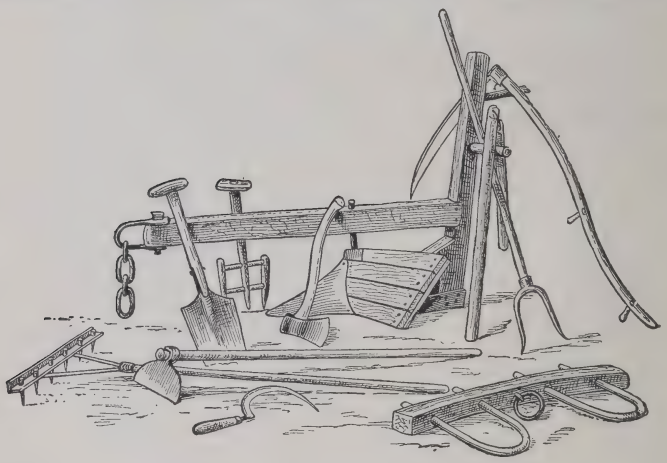
and indirectly brought about changes which materially affected American industry. Most of the effort of the farmers was still necessarily devoted to enlarging the cultivated area of their farms — clearing the ground and removing timber and stones. So long as no available market existed for surplus products, a suitable stimulus was lacking to secure improvement in existing methods. Nor was the mass of the farmers of that time especially enterprising or well educated. Strange as such a complaint sounds to us, foreign travelers in the United States in the last quarter of the eighteenth century are nearly unanimous in describing the idling and lounging of the people, which they seem to have considered a national vice.[1]

After the Revolution, the greater political freedom of the individual and the removal of restrictions upon foreign trade, together with the increased demand for our products during the continental wars abroad, greatly stimulated the interest in agriculture. The formation of societies for the promotion of agriculture was also an important step, for they awakened inquiry and intellectual activity and paved the way for agricultural literature. Five such societies were organized between 1785 and 1794 at Charleston, Philadelphia, New York, Massachusetts, and Connecticut. In 1776 less than forty newspapers were published in the country, none of them agricultural; but these societies published books, pamphlets, and papers, and thus prepared the way for the agricultural periodical and newspaper, which began early in the nineteenth century. By their meetings and publications the agricultural societies also secured a diffusion of the knowledge which had been acquired in the separate colonies and made repeated trials of the same thing less necessary; they also extended the use of improved implements and labor-saving machines.

39. Farm implements. — With the exception of plowing and harrowing, practically all farm operations at the end of the eighteenth century were performed by manual labor with the aid of very rude and relatively ineffective tools. In the

[1] H. Adams, Hist. of the U. S., vol. I, p. 56.

first census only one manufactory of agricultural implements was mentioned, a small establishment in Massachusetts which made annually 1100 rakes, valued at $1870; even as late as 1820 only a few small factories of plows, scythes, axes, shovels, hoes, etc., were enumerated. The plow at the time of the Revolution was of essentially the same form as that of the ancients, with wooden mold-board and clumsy frame. The first patent for a cast-iron plow in the United States was granted in 1797 to Charles Newbold of New Jersey, who, after



FARMING TOOLS, 1790

This meager list represents practically all the agricultural implements used by American farmers at the end of the eighteenth century. Notice the clumsy plow, with wrought-iron share, wooden mold-board, and heavy beam and handles; the wooden rake and fork; the primitive scythe, sickle, and flail. Great manual strength was necessary to use these tools, and the work was most exhausting.

spending, as he alleged, $30,000 in trying to get it into use, abandoned the attempt, the farmers declaring that iron plows poisoned the soil and prevented the growth of crops. The first really great improvement in the plow was the result of studies made by Thomas Jefferson on the shape of the mold-board. The introduction of the cast-iron plow into general

use, which was completed by 1825, marked an era in American agriculture and led directly to many other improvements.

Two other important agricultural machines which were introduced during this period were the grain-cradle for cutting the crop, the first patent for which was issued in 1803, and the fanning-mill for cleaning it after it was threshed, which soon superseded the old hand-fan. A beginning was also made in the application of chemistry to agriculture, but the development of a science of agriculture did not take place until after 1840.

40. Live stock. — In the southern states there grew up a considerable stock-raising industry in Virginia and Kentucky, especially the raising of mules to supply the cotton plantations. Washington early became interested in the mule as an animal well adapted to the climate of the South and able to endure the hard usage accorded all animals by negro slaves. Indeed, he may be said to have been the founder of the mule-raising industry in the United States. In the North several important developments in the live-stock industry began soon after the Revolution. American breeders began the importation of English Shorthorns and Herefords for the purpose of improving the native stock, though these great breeds had only recently been definitely established in England. Some of these cattle came to be known as the "milk breed" and others as the "beef breed."

The breed of horses was also improved by the importation from England in 1788 of Messenger, the famous sire of American trotters. Since the trotting horse is one of the very few distinctive breeds of live-stock which this country has developed, this event is noteworthy. It is supposed that the Conestoga horses, which later became famous as the freighters in western Pennsylvania, were developed during this period from some large Flemish horses which the Dutch had brought to New York. Oxen were still the principal work animals on the farm, though because of their slowness and clumsiness they gave way to horses as soon as horse-drawn farm ma-

chinery was introduced. With the importation of the first Merinos in 1793 noteworthy efforts were made to improve the breed of sheep. Great numbers of the famous Spanish sheep were thrown on the European market as the result of the Napoleonic wars, and enterprising American farmers began importing them, so that by 1809 there were 5,000 in the country.

41. Agricultural products. — The agriculture of the period under discussion was for the most part simply self-sufficing, though of some articles there was an exportable surplus. Of these tobacco was the most important until 1803, when it was passed by cotton, which thereafter constituted about one third of our agricultural exports. In New England hay was the most important single crop. The production of grains and live stock was greatly increased by the rapid settlement of the Ohio Valley; the population of Kentucky, Tennessee, Ohio, Indiana, and Illinois increased in the decade ending with 1810 from about 300,000 to 935,800. Most of the increase in foodstuffs was, however, consumed at home by the growing population. The total production cannot be stated, but there was, in addition to tobacco and cotton, a considerable export of wheat and flour, rice, Indian corn and meal, beef, pork, tallow, hams, butter and cheese, lard, live cattle, and horses.

VALUE OF AGRICULTURAL EXPORTS

Year	Vegetable Products other than Tobacco and Cotton	Animal Products	Tobacco	Cotton
1802.....	$12,790,000	.....	$6,220,000	$5,250,000
1803.....	14,080,000	$4,135,000	6,209,000	7,920,000
1804.....	12,250,000	4,300,000	6,000,000	7,650,000
1805.....	11,752,000	4,141,000	6,341,000	9,445,000
1806.....	11,850,000	3,274,000	6,572,000	8,332,000
1807.....	14,432,000	3,086,000	5,476,000	14,232,000
1808.....	2,550,000	968,000	26,000	2,221,000

CONFLICTING LAND CLAIMS
OF STATES
1783
SCALE OF MILES
0 100 200 300 400 500
Longitude West from Greenwich
L. L. POATES ENGR'G CO., N.Y.
BRITISH POSSESSIONS
Albany R.
James Bay
L. of the Woods
L. Superior
Ceded 1784
Sault Ste. Marie
Mackinac
L. Michigan
L. Huron
Ceded 1785
MASSACHUSETTS
Detroit
St. Joseph
L. Erie
Ceded 1786
CONNECTICUT
Ceded 1800
PENNSYLVANIA
Pittsburgh
Ceded 1784
Vincennes
St. Louis
Kaskaskia
Ohio R.
Not Ceded
(KENTUCKY—ADMITTED 1792)
Cumberland R.
Nashville
Ceded 1790
NORTH CAROLINA
Ceded 1789
SOUTH CAROLINA
Ceded 1802
GEORGIA
OLD LINE OF WEST FLORIDA
DISPUTED BY SPAIN
Natchez
TREATY LINE OF 1783
Pensacola
New Orleans
GULF OF MEXICO
Quebec
Montreal
Ottawa R.
St. Lawrence R.
TERRITORY IN DISPUTE
Oswego
Albany
Portsmouth
Boston
Hartford
New Haven
New York
Trenton
Philadelphia
Baltimore
Richmond
Norfolk
Raleigh
C. Hatteras
Charleston
Savannah
St. Marys R.
ATLANTIC OCEAN
BAHAMA IS.
Mississippi R.
Missouri R.
Wabash R.
Tennessee R.
Cumberland R.
Savannah R.
Roanoke R.
Potomac R.
Delaware R.
Susquehanna R.
Hudson R.
Connecticut R.
Kennebec R.
Penobscot R.
St. Croix R.

The value of the exports from 1802 on, when statistics were first collected, is shown in the preceding table. It should be remembered, however, that owing to the Napoleonic wars abroad, the exports during these years were abnormally large; during the embargo and the War of 1812 they declined greatly.

A characteristic of the early years of the century was the concentration of farming upon the cultivation of the more profitable crops and the elimination of many which had long been under experiment. In New England and the middle States attempts were still being made to grow lucerne, vetches, rape, spelt, spurry, poppies, madder, woad, and similar crops, but the discussions initiated by the agricultural societies showed most of them to be unprofitable and their culture was now finally discontinued.

42. Causes of agricultural progress. — In addition to the condition already named, President F. A. Walker mentions[1] three other causes which he thinks were responsible for our great progress and pre-eminence in agriculture since the colonial days. First, the vast breadth of virgin lands, which required only the cultivation of the best soils. Second, the popular tenure of the land and excellent laws for the registration of titles and transfer of real property. Third, the fact that the agricultural class, unlike the body of cultivators in almost every country in Europe, had never constituted a peasantry, in any proper sense of that term. "The men who tilled the soil here were the same kind of men, precisely, as those who filled the professions or engaged in commercial or mechanical pursuits. . . . This state of things made American to differ from European agriculture by a wide interval. There was then no other country in the world . . . where equal mental activity and alertness have been applied to the soil as to trade and industry. But even more than the total effect of the fortunate conditions which have been indicated, American agriculture in those days owed its really remarkable power to

[1] The Making of the Nation, p. 66.

a special, almost a technical, quality of our people; namely, mechanical insight and invention."

43. Public lands and early land policy. — At the close of the Revolution the lands between the Alleghanies and the Mississippi River, which were ceded by England in the treaty of 1783, were claimed by seven of the original States. Their claims, based upon colonial grants, were confused and often conflicting, and led to dissensions, especially with the landless States. Owing chiefly to the insistence of Maryland, the States finally agreed to cede their rights to the western lands to the central government, and by 1802 the United States, which did not own a single acre of land in 1781, was in possession of an immense public domain of 333,108 square miles. Since that time it has been increased by annexation and purchase, and at the same time reduced by sale and gift.

In the disposal of the public land two distinct policies have been pursued by the United States. According to the first, which continued from about 1784 to 1820, it was held that the lands should be used and sold for the sake of revenue and to pay off the public debt. Under the second, which has obtained from 1820 to the present time, the western lands were to be disposed of — sold or given away — to settlers and others for the sake of developing the country. As a rapid disposal of the public lands and immediate revenue were desired at first, it was provided in 1785 that land should be sold only in large quantities; 640 acres was the minimum amount one person could purchase. Under this act a few large sales were made, all in the present State of Ohio, amounting by 1800 to 1,484,087 acres, or less than 100,000 acres a year. The effect was to concentrate the holdings in the hands of a few large speculators or proprietors rather than in the possession of actual settlers, and this policy was accordingly modified in 1800.

44. Sales on credit. — The act of May, 1800, and subsequent acts permitted the sale of land in minimum tracts of 160 and 320 acres, on credit, at the fixed price of $2 an acre.

ADDITIONS TO THE TERRITORY OF THE UNITED STATES FROM 1800 TO 1920

TERRITORIAL DIVISION	Year	Area added	Purchase price
		Square miles	*Dollars*
Louisiana purchase	1803	875,025	15,000,000
Florida	1819	70,107	(*a*)6,489,768
Texas	1845	389,795	.....
Oregon Territory	1846	288,689	.....
Mexican cession	1848	523,802	(*b*)18,250,000
Purchase from Texas	1850	(*c*)	10,000,000
Gadsden purchase	1853	36,211	10,000,000
Alaska	1867	599,446	7,200,000
Hawaiian Islands	1897	6,740	(*d*) 4,000,000
Porto Rico	1898	3,600	.....
Guam	1898	175	.....
Philippine Islands	1899	143,000	20,000,00
Samoan Islands	1899	73	.....
Additional Philippines	1901	68	10,00000
Panama Canal Zone	1904	426	10,000,000
Virgin Islands	1917	432	25,000,000
Total	.....	2,937,309	122,039,768

(a) Includes interest payment.

(b) Of which $3 250,000 was in payment of claims of American citizens against Mexico.

(c) Area purchased from Texas amounting to 123,784 square miles is not included in the column of area added, because it became a part of the area of the United States with the admission of Texas.

(d) Public debt assumed.

Under the influence of the credit provision, by which only one fourth of the purchase money had to be paid down, the rest falling due in three annual installments, large sales were made, amounting in the next twenty years to about 18,000,000 acres. Many of the purchasers were speculators and many were settlers who had assumed obligations beyond their ability to fulfil, especially during the hard times from 1808 to 1815. After that year the great rise in the price of cotton to 26 and

34 cents a pound led to still greater speculation in western lands, amounting to over five and a half million acres in the single year 1819. The fall in the price of cotton the following year and other causes led to another crash, and the arrears to the government for land sales grew to $21,213,350. Numerous relief acts had already been passed upon the demand of impecunious debtors, but in 1820 the matter was finally adjusted by allowing those indebted to the government to obtain the proportion of land already paid for by relinquishing the remainder to the United States. About 2,500,000 acres reverted to the government under these acts. Perhaps three-fourths of the settlers who moved west before 1820, however, had not purchased their lands at the public land offices, but had settled in regions like Kentucky or Tennessee, which had never come under the land system, or on land held under earlier titles, as in Ohio. These lands could generally be had for less than the minimum price of the public lands.

SUGGESTIVE TOPICS AND QUESTIONS. CHAPTER III

The problem of the South had been to find a profitable staple crop to take the place of the declining tobacco and rice culture. With the success of cotton growing the paramount problem became that of obtaining an adequate labor supply. In the North the problem was rather that of providing labor-saving devices and of eliminating unprofitable crops and processes.

1. To what extent had cotton been produced throughout the world before the introduction of the cotton gin? [Encycl. Brit., art. Cotton.]

2. Describe Whitney's cotton-gin, previous attempts, and his subsequent treatment. Do you think he was treated fairly? [T. Pitkin, Stat. View, 109; M. B. Hammond, Cotton Culture, 25–31; J. L. Bishop, Hist. of Amer. Manuf., II, 101; H. Thompson, The Age of Invention, 41–48; Encycl.]

3. Has any other product ever exerted such an effect on the development of any country as cotton on that of the United States? [J. A. B. Scherer, Cotton as a World Power.]

4. What progress had been made towards emancipation and abolition of slavery prior to 1793? [W. E. B. DuBois, Suppression of African Slave-Trade, chaps. 2–5; K. Coman, 116–120, 255; E. Ingle, Southern Side-lights, chap. 8; G. Livermore, Opinions of the Founders, 20–24, 36–44.]

5. Where were most of the slaves to be found in 1790? How were they treated? [As under question 4.]

6. Was the North interested in the maintenance of slavery, and if so in what way?

7. What was the provision in the Constitution prohibiting Congress from suppressing the slave-trade prior to 1807? Why was it inserted?

8. Describe the slave-trade as it existed before its prohibition by Congress in 1807. [DuBois, Suppression of African Slave-Trade; J. R. Spears, The American Slave Trade; J. B. McMaster, II, 15.]

9. Why did the population increase so much more rapidly in the free States than in the slave States?

10. What were the economic and social characteristics of the North and South at this time? [H. Adams, Hist. of U. S., II, chaps. 1, 2; McMaster, I, 17; II, 4–16.]

11. Give a picture of farming in New England at this time. [T. Dwight, Travels in New England and New York; Eighty Years' Progress, 27.]

12. What were the principal products of the United States during this period, and where raised? [T. Pitkin, Stat. View, chap. 4.]

13. What influence did the growth of agricultural societies have on the development of agriculture? [Eighth Census (1860), vol. Agric., xiii; Rep. of U. S. Com'r of Agric., *1872,* 282; Rep. of Conn. Bd. of Agric., *1880,* 98.]

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CHAPTER IV

THE WESTWARD MOVEMENT

45. Significance of the westward movement. — From the beginning of our history the general movement of the population has always been westward, but the expression "westward movement" has a peculiar significance during this period, for now began on a large scale the serious task of occupying and subduing the country west of the Alleghanies. Other peoples in their growth have had to meet and conquer rival nations. With the exception of the Indians, who often obstructed or diverted, but never permanently hindered the westward expansion, the only serious obstacles at this time in the way of the Americans were the natural barriers and the inadequacy of the existing means of transportation. It was the quiet, restless, onward march, not of an invading army, but of peaceful settlers. For three quarters of a century this continued, giving character to American life and a sturdiness and energy which were lent only by contact with primitive conditions and large opportunities. The very nature of the people seems to have been changed by this great task of subduing a continent, gaining at once in initiative and vigor.

Beginning almost with the Revolution, and continuing with renewed energy after the embargo and the War of 1812, the people of the United States addressed themselves as a nation to the development of their internal resources. After 1808 capital and labor began to be diverted from commerce and shipping and invested in western lands and eastern manufactures; attention was now directed to internal development rather than to foreign policy. Since then the great work of

the American people has been that of opening up and exploiting their own resources, and has been surpassed in importance, if at all, only by the struggle for the preservation of the Union. This was the beginning of an economic revolution and has given color to and dominated our entire industrial and political history from that day almost to the end of the nineteenth century.

46. Early westward migration. — The successful ending of the French and Indian War, which gave to England the territory east of the Mississippi and removed the fear of French aggression, afforded the opportunity for a westward movement of the population, though this was opposed by the British government in the Royal Proclamation of 1763. It could not be restrained, however, and the earliest advance took place into what is now Kentucky and Tennessee. The territory between the Tennessee and Ohio rivers had been ceded to the English by the Indians, by the treaty of Fort Stanwix in 1768 and other treaties, and lay invitingly open to settlers from Pennsylvania, Maryland, Virginia, and North Carolina by way of the Ohio River and its tributaries or by the Cumberland Gap. The movement was a slow one, retarded by Indian resistance and, both before and after the Revolution, by English hostility, both of which had to be met and overcome, largely by the efforts of the settlers themselves. Politically these early settlements were of great importance in settling the dispute with Great Britain for possession of the western crown lands. By 1790 there were about 200,000 persons in the territory west of the Appalachian Mountains; ten years later, 387,183; and in 1810, 1,075,398. The distress which followed the War of the Revolution and the attendant economic chaos drove the people from the seaboard over the mountains in search of new fortunes.

47. Movement of the population. — There was a rapid settlement of the Mississippi valley after the purchase of Louisiana, and between 1810 and 1820 that movement re-

ceived a new stimulus. In 1810 about one million people were living in the western States and territories, a number which more than doubled within the next ten years. So long as land was to be had, the rate of movement westward has always been a fluctuating one, being retarded or hastened by the economic condition of the people: in good times it has been slow; in bad times, rapid. During the period of depression following the Revolution, the migration from the Atlantic seaboard was rapid. It declined during the good times of the Napoleonic wars, with the exception of a huge wave at the time of the Peace of Amiens, which sufficed to bring Ohio into the Union. The embargo and the War of 1812 again sent streams of settlers west in search of better conditions. This movement has been well described in Peck's New Guide for Emigrants to the West, published in Boston in 1837, in the following passage:

"Generally, in all the western settlements, three classes, like the waves of the ocean, have rolled one after the other. First comes the pioneer, who depends for the subsistence of his family chiefly upon the natural growth of vegetation, and the proceeds of hunting. His implements of agriculture are rude, chiefly of his own make, and his efforts directed mainly to a crop of corn and a 'truck patch.' . . . A log cabin, and occasionally a stable and corn-crib, and a field of a dozen acres, the timber girdled or 'deadened,' and fenced, are enough for his occupancy. . . . The pre-emption law enables him to dispose of his cabin and corn-field to the next class of emigrants; and, to employ his own figures, he . . . 'clears out for the New Purchase' . . . to work the same process over.

"The next class of emigrants purchase the lands, add field to field, clear out the roads, throw rough bridges over the streams, put up hewn log houses with glass windows and brick or stove chimneys, occasionally plant orchards, build mills, school-houses, court-houses, etc., and exhibit the picture and forms of plain, frugal, civilized life.

"Another wave rolls on. The men of capital and enterprise come. The settler is ready to sell out and take advantage of the rise in property, push farther into the interior and become himself a man of capital and enterprise in turn. The small village rises to a spacious town or city; substantial edifices of brick, extensive fields, orchards, gardens, colleges, and churches are seen."

48. The settlement of the West. — The three types just mentioned represent three stages in the development of the West, and as many steps in the process of pioneering. The early pioneers who moved out to the frontier just after the Revolution did so under very different conditions than were present in the later movement. Without improved means of transportation they were forced to make their way on foot, on horseback, or by wagon, over roads which were but slightly improved trails. The settlement of the West may fairly be regarded, as Callender suggests, as a great example of colonization, for the land journey from, say, Connecticut to Ohio was more difficult and expensive to make than the ocean journey from Europe to New England. Arrived at his destination, the pioneer was cut off from communication with his old home, and suffered all the inconveniences and hardships of settlement in a new country. With little capital, even in the form of adequate agricultural implements, with no markets — certainly no convenient ones — for the exchange of his surplus products, he was thrown back entirely upon his own resources. Under these conditions life was hard and progress was slow.

When the second generation pushed their way along the track thus marked out for them, they had the advantage of improved means of transportation — turnpikes and canals, and later still the railroad. The West was thus made at once more accessible for settlers and they were able more easily to reach markets, which moreover had now grown up and were ready to purchase their surplus products. So important were these factors that one observer called the railroad the "soul of western civilization." The very facility of movement brought evils of its own and induced a migratory spirit among the people, which made them ever ready to move on. The last stage in western progress is reached when the men of capital come. They are the permanent settlers and introduce permanent improvements: they build durable houses, establish manufactories, and develop the resources of the

country. But by the time this stage in development has been reached the frontier has been pushed farther on, and the work of real pioneering is being done by other hands.

49. Results of the movement. — The population of the northwestern States — Ohio, Indiana, Illinois, Michigan, Wisconsin, Iowa — increased from 50,240 in 1800 to 792,719 in

MIGRATING FROM CONNECTICUT TO OHIO

Settlers migrating from New England or New York to the Ohio valley usually traveled by wagon as far as Pittsburgh, from which point they floated down the river to their destination. For protection against the Indians the emigrants usually went in large companies.

1820, and 2,967,840 in 1840. "We are great," said Calhoun in 1817, "and rapidly — I was about to say fearfully — growing." So great indeed had this westward migration become by 1817 that its effects were already apparent in the East, from which most of the settlers came. In New York the increase in population between 1810 and 1816 was only 3600, which was much less than the gain in the number of immigrants in the State. The West, on the other hand,

developed rapidly; but there was no sudden growth of cities. The population simply spread out over a wider territory, which it brought under cultivation. Thus from 1829 to 1830, while the population increased 32.5 per cent., the settled area increased 24.4 per cent.; between 1830 and 1840 the increase respectively was 32.5 per cent. and 27.6 per cent. During this twenty-year period, therefore, in spite of the fact that the population almost doubled, the density of the settled area increased by only about two individuals to the square mile. Great as was this movement, the real significance lay not so much in the increase in population as in the opening

CONESTOGA WAGON

A favorite type for transporting freight across the Alleghanies to the Ohio and Mississippi valleys previous to the introduction of the railways. Drawn by four to seven horses, they could carry from four to six tons, on which the rates from Philadelphia to Pittsburgh were about $2.00 a hundred pounds; the trip between these points was made in twenty days. They were first extensively used in the Conestoga valley, from which they derived their name. The body was made seamless and water-tight and shaped much like a boat, so that it would float.

up of the West. Before they could make any economic contribution to the rest of the country, however, the western settlers must have access to a market. There must not only be improvements in the means of transportation and communication, but there must be a demand for their products. The first of these conditions was in large measure met by the invention of the steamboat; the second by the spread of cotton culture through the Southwest.

50. Western trade. — In the frontier of a country, according to Ratzel, is to be found an index of its growth or decay. Judged by this standard the early western settlements were significant of great national vigor. Cut off as they were from easy communication with the eastern seaboard, they were compelled to become largely self-supporting and economically independent. Of necessity the settlers were forced, by the high prices of imported goods, to manufacture articles of daily use. Almost every community had a grist and saw mill, while many had forges, tanneries, and salt works, paper and cotton mills. A few products like hides, furs, and ginseng they could send East by pack horses or wagon, while hogs, cattle, and horses could be driven over the mountains; but most of their produce found its way down the Mississippi. Some manufactured articles were shipped from the East by wagon to Pittsburgh, from which place they were distributed by water. Down to 1807, however, the West showed little commercial development; a growing population found easy subsistence on a fertile soil, but they had as yet little in the way of surplus products to sell and no important market. By 1807 the total value of the produce received at New Orleans was only $5,370,000.

MISSISSIPPI RIVER FLATBOAT

Flatboats were the chief means of conveying goods to market in the West. They could only be floated down stream, and were built of materials that could be broken up at the end of the voyage and sold as lumber. It took four weeks to make the journey from St. Louis to New Orleans with such a craft.

51. The introduction of the steamboat on western waters. — Within four years after the launching of the *Clermont* on the Hudson (1807) the first steamboat was introduced on the Ohio; but not until 1816 did it succeed in making the trip up the Mississippi River from New Orleans against the swift

MISSISSIPPI RIVER STEAMERS AT CINCINNATI, 1830

After 1812 steamers multiplied on the western rivers, as the boats could be constructed anywhere out of the abundant timber, while the fuel was collected from the wood on the river bank. Only the engines and boilers had to be brought over the mountains. In 1820 it took thirty-five days to go up from New Orleans to Pittsburgh by steam and ten days to go down.

current. With that event began the era of successful steam navigation on the Mississippi and its tributaries. The number of steamboats on the western rivers increased rapidly, from 14 in 1815 to 200 in 1829, and 450 in 1842. An especial impetus was given to the steamboat trade in 1824 by the decision of the Supreme Court in the celebrated case of Gibbons *vs.* Ogden, that the waters of the Hudson, and hence of other rivers throughout the United States, were the heritage of the people and could not be monopolized by any State or individual. A company, headed by Fulton and Livingston, who had made the first experiments on the Ohio and Mississippi, had obtained a charter from Louisiana giving them the exclusive right of navigating the Mississippi with steam vessels for fourteen years. This monopoly was now broken down and navigation made free to all, subject only to Federal legislation. In 1825 the steamboat had passed all competitors and in the next year carried fifty-seven per cent. of all the freight to New Orleans.

Side by side with the steamer a considerable flatboat trade still existed, of which a picture is given by Levi Woodbury, who made a trip down the Mississippi in 1833.

"At every village we find from ten to twelve flat-bottom boats, which besides corn on the ear, pork, bacon, flour, whiskey, cattle and fowls, have a great assortment of notions from Cincinnati and elsewhere. Among these are corn brooms, cabinet furniture, cider, plows, apples, cordage, etc. They remain in one place until all is sold out, if the demand be brisk; if not, they move farther down. After all is sold out they dispose of their boat, and return with the crews by the steamers to their homes."

In course of time, as the plantations grew larger, this method of peddling from wharf to wharf declined. The planters engaged agents at New Orleans to sell their cotton and to purchase supplies, which were shipped back by steamer. After about 1846 there was a gradual decrease in the number of flatboats, and by 1856 they had ceased to be a factor in the river trade and were no longer listed among the arrivals at New Orleans.

52. Extent of the internal trade. — The steamboat had furnished the western territory with a fairly rapid and adequate means of transportation, and its effect upon the trade of that section was quickly seen. Rates were high at first: from New Orleans to Louisville in 1816 freight rates were $112 a ton and passenger fares $125 (half rates down stream), but they were materially reduced as soon as the trade became established. The improvement in speed, by reducing the time, increased the number of trips. The value of the commerce carried on the rivers expanded greatly. The value of the produce received at New Orleans in 1816 was $8,062,540, of which at least eighty per cent. came from the Ohio and upper Mississippi. This increased by 1829 to $22,065,518, and to $49,763,825 in 1840. The shipments were at first raw agricultural products, then articles like pork, flour, and others that required some process of treatment, and finally simple manufactured articles, such as bagging, rope, twine, candles, glass, and iron. They tell the story as well of the industrial advance in the Ohio valley as of the growing commerce between the sections. By 1842 the money value of the direct river trade to New Orleans was given as $50,506,903. Including the intermediate trade and the passenger traffic, the total commerce of the western rivers was probably over $100,000,000.

At the same time the trade on the Great Lakes was steadily growing, though not so rapidly as the river commerce. In 1816 the first steamer was built on the waters of Lake Ontario, and three years later the first steamer on Lake Erie, the *Walk-in-the-Water,* was launched. The building of the Erie Canal greatly stimulated the lake trade, the tonnage on all the lakes increasing from 3500 in 1820 to 20,000 in 1830, and 75,000 in 1840.

53. Spread of cotton culture in the Southwest. — The second condition to the development of the West lay in the creation of a market. This condition was met by the extension of cotton culture into the Southwest, which at once led

to the settlement of that section and developed a market for the surplus agricultural produce of the North. At the time of Whitney's invention cotton was raised only in Georgia and South Carolina; thence it spread to North Carolina and Virginia during the early years of this century, but for more than twenty years it was confined to the Atlantic seaboard. By 1811 a beginning had been made in Tennessee and Louisiana, but together they produced only one sixteenth of the cotton raised in the United States. After the war with England, Alabama and Mississippi also began to attract attention as cotton-growing regions, and for the next twenty-five years a perfect stream of immigrants poured into this fertile district. By 1821 the four last mentioned States raised one third of the cotton grown in the United States, by 1831 nearly one half, and by 1834 over two thirds. The production of sugar was also increasing in Louisiana at this time, and was very profitable. The growing importance of this section may be shown by the exports of cotton from Louisiana, which increased from five million pounds in 1810 to thirty in 1820 and one hundred and sixty-four in 1834. At the same time the population of the South was growing by leaps and bounds: Alabama, Louisiana, and Mississippi increased from 116,908 in 1810 to 355,756 in 1820, 660,667 in 1830, and 1,318,818 in 1840, practically doubling every ten years.

54. Effect on the South. — The effect of this extension of cotton culture into the Southwest was first of all to increase enormously the production of cotton. From 85 million pounds in 1810 the annual production grew to 160 in 1820, and 350 in 1830. Owing to a steady fall in the price of cotton the total value of the crop does not show the same increase, the figures for the same years being $13,600,000, $27,200,000, and $35,000,000; over three fourths of this was exported. With such a profitable crop all the energies of the southern planters were devoted to extending the cotton area, other crops being completely neglected. At the same time

slavery was firmly established on an economic foundation, and so far as the South was concerned the whole gain of the extension of cotton culture went to build up and extend the system of slavery. The circle of investment, as described by a southern journal, was "making more cotton to buy more negroes to raise more cotton to buy more negroes." Most of the planters in the Southwest were slave-holders who came from the older slave States with their property; two hundred and fifty thousand slaves are reported to have been brought into this region during the single year 1836.

By the ordinance of 1787 and subsequent acts of Congress slavery had been forbidden north of the Ohio River and east of the Mississippi, but as yet the question of slavery west of that great river had not been settled. In 1812 the slave State of Louisiana was admitted to the Union, and in 1818 Missouri applied for admission, followed a year later by Maine. The question as to whether Missouri should be admitted as a free or a slave State was hotly debated. Finally, in 1821, by the so-called Missouri Compromise, Missouri was admitted as a slave State, while, to balance the concession to the slave-owners, Maine was admitted as a free state and slavery was forbidden in the remainder of the Louisiana purchase north of Arkansas. Thus the cotton-growing States of the Southwest were opened to slavery and remained so until the time of its final abolition.

55. Slavery is firmly established. — The development of slavery proceeded with the spread of cotton culture and became firmly identified with it. By 1822 the large plantation slave system was taking the lead, and by 1840 it had displaced the small planter who was working with free labor. The character of slavery had meantime changed from the patriarchal serfdom of colonial days to a well-organized industrial system upon which was founded the economic development of the South. At the same time the attitude of the South towards the institution changed with the expansion of the cotton industry. From 1808 to 1820 many Southerners

were willing to abolish the slave system, could it be done safely and without loss. From 1820 on, however, there was no talk of abolition; the demand for cotton and the movement into the rich bottom lands of Mississippi led to a demand for labor which could not be supplied even by the traffic which prevailed between the slave-breeding border States and the cotton-growing Gulf States. An illicit slave-trade accordingly sprang up between Africa and the West Indies or Texas, whence slaves were smuggled into the southern States. The increased prices of slaves, owing to the risk attaching to the business and to the demand in the cotton-fields, proved an irresistible attraction to American capital, and much was invested in the trade. In 1815 the average value of all slaves dependent on cotton culture was $250; in 1840 it was estimated by De Bow at $500. Slavery had now become more than ever localized in the South. In 1820 only 19,108 of the 1,538,038 slaves in the United States lived north of Mason and Dixon's line; in 1840 only 1129 out of 2,487,355 were to be found there. The total number of slaves showed an increase in almost the same proportion as the white population, and this in spite of the large additions to the latter by immigration.

Towards the end of this period, in 1831, the anti-slavery movement began in the North and continued until slavery was done away with during the Civil War. There was, however, a strong anti-abolition spirit still to be found there, while Congress remained distinctly neutral or even friendly to the slave interests, as indicated by the "gag resolutions" which tabled without further action all anti-slavery petitions presented to Congress. About 1838 a change in sentiment towards slavery began in the North, but it did not gather strength until after 1840.

56. Effect on the West. — We have already seen something of the great increase in commerce on the western rivers after 1816. It was the opening up of the Southwest, with its one-sided single-crop cultivation, that provided an outlet for

the surplus agricultural produce of the West and thus permitted the development of this section as well. So great was the inclination of the cotton planters to confine themselves to their staple crop that other products were entirely neglected, and instead of being raised at home were purchased from the agricultural States of the Northwest with the proceeds of the cotton crop. Corn, flour, bacon, hams, lard, and live stock, with a hundred other articles of minor importance, were floated down the Ohio and Mississippi rivers and found a ready market in the southern States. The following table shows the fluctuations in the amount of a few products arriving in New Orleans:

RECEIPTS OF PRODUCE AT NEW ORLEANS

Articles	1822	1830	1840	1850	1861
Bacon, pounds	.....	1,282,354	1,117,987	209,045	784,399
Corn in ear, barrels	57,179	42,194	152,965	42,719	22,216
Corn, shelled, sacks	.....	290,754	278,358	1,114,897	315,652
Flour, barrels	120,159	360,580	482,523	591,986	281,645
Lard, kegs	13,003	131,111	177,303	302,366	4,290
Pork, pounds	142,800	953,200	5,099,987	10,513,895[1]	610,219

[1] 1851.

An estimate of 1845, given by Ingle, was that in twenty years southern planters had spent $900,000,000 in neighboring States for mules, horses, implements, and clothing, an expenditure made necessary because they had employed all their labor and land in producing staple crops.

57. Effect upon the East. — The effects of the extension of cotton culture and the consequent creation of an important new market was felt in the East as well as in the Northwest. The growing manufactures of this section found a ready sale among the population west of the Alleghanies. There had thus developed a sectional or territorial division of labor, by which the South produced raw materials (mainly for export),

the Northwest raised the food supplies, and the East devoted itself to manufactures. The trade in each case, however, was a one-sided one and did not lead to close economic interdependence; the East sold to the West but did not buy from it, the West sold to the South, and the South exported three fourths of its crop to England. Some indication has already been given of the large and remunerative internal trade which resulted from the exchange of these goods. An enormous stimulus was given to the commercial interests of the country and new opportunities were open to the merchant, importer, ship-owner, banker, insurance company, and middlemen in general, most of whom were located in the eastern States. The growth of manufactures has been described, but it is impossible to give any adequate picture of the development of the commercial class at this period. According to an estimate by Seaman, in 1840 there were 188,000 persons engaged in commerce and navigation employing a capital of $430,000,000.

SUGGESTIVE TOPICS AND QUESTIONS. CHAPTER IV

The pioneer settlers who moved west had several problems to meet in their new adventure: by what route, by what sort of conveyance, to what section should they go. Once arrived at their destination they faced new problems of adjustment, of production, of finding a market for their surplus products, and of obtaining for themselves the manufactured goods of more advanced sections.

1. Is Bishop Berkeley's saying, "Westward the course of empire takes its way," true of the United States?

2. "The true point of view in the history of this nation is not the Atlantic coast, it is the great West. Even the slavery struggle . . . occupies its important place in American history because of its relation to westward expansion." Do you agree with this? [F. J. Turner, The Frontier in Amer. Hist., in Proc. Amer. Hist. Ass., III, 200.]

3. Was settlement or speculation the more important motive in western pioneering? [T. Flint, Recollections, 198–207; F. A. Michaux, Travels, 188–194; F. J. Turner, The New West, chap. 6.]

4. Where were the important western settlements? Why were these

particular localities chosen? [A. B. Hart, Hist. told by Contemp., III, 97–106.]

5. How did a western emigrant move in the days before the railways? [Hart, Hist. told by Contemp., III, 114–119.]

6. What was the character of the river craft, and of navigation on western rivers? [A. B. Hulbert, Waterways of Western Expansion, chaps, 3–6; Internal Commerce of U. S., Treas. Dept. *1887*, 172–213; W. L. Abbot, Amer. Ships and Sailors, 268–269.]

7. What attempts have been made to restrict the navigation of the Mississippi River other than that mentioned in the text? [T. J. Lawrence, International Law, p. 188; E. Schuyler, Amer. Dipl. and Com., chap. 6.]

8. What was Mason & Dixon's line? How did it come to be established? [E. Channing, Stud. Hist. of U. S., 115–116; H. W. Elson, Hist. of U. S., A. B. Hart, Essentials, 109.]

9. Describe the abolition and anti-abolition sentiment in the North, 1830–40. [E. Channing, Stud. Hist., 423–427.]

10. As the population of the cotton States grew, what proportion was white, what slave, and what free colored? [E. C. Seaman, Progress of Nations, 1, 584; K. Coman, 216; Fifth, Sixth and Seventh Census; Eighth Census (1860), vol. on Pop. vii–xvi; J. D. B. De Bow, Ind. Res. of So. and West, III, 419.]

11. Could the South have diversified its crops and produced its own food products, manufactured goods, etc.? Why did it not do so? [E. Ingle, Southern Sidelights, chap. 3; De Bow, Ind. Resources of So. and West, arts. Agric., Cotton, Slavery, South, etc.]

12. What were the exports of cotton during this period? Was there any connection between them and the total imports, and the countries involved? [L. Woodbury, Writings, III, 272.]

13. How much of the cotton raised was consumed at home? How much in the South? [Woodbury, Writings, III, 289–311.]

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CHAPTER V

PUBLIC LANDS AND AGRICULTURE (1808–1860)

58. Importance of the public lands. — It is almost impossible to exaggerate the influence which the vast western expanse of cheap land has had upon the economic history of the United States. In the later days of the Confederation and the early days of the Republic it bound together by economic interests the States at a time when they otherwise would have drifted apart. Later it afforded an outlet for a growing population, which, instead of becoming denser, has spent its force in taking up new territory. The problem of over-population — that bogy of the early nineteenth century in England — had no meaning in a country where an increase of hands was the greatest need. Unemployment, the standard of living, and the rate of wages were all solved by a recourse to the open land of the West, while the problem of immigration was mainly that of inducing foreigners to come to our shores. This abundance of land has greatly simplified economic and social problems and has acted as a safety-valve in times of depression and panic.

59. Disposal of the land for settlement. — The early policy of the government, of land sales for the sake of revenue, gradually gave way to the second, and what has proved to be the permanent, policy respecting the public lands. This is the system of land grants for actual settlement in small lots suitable for cultivation. By the act of April, 1820, sale for credit was abandoned and the price reduced to $1.25 an acre while the minimum tract to be sold to one individual was reduced to eighty acres. The earlier system had been denounced by western men, who objected to the use of the public

domain as a source of government revenue, to the high price of the land, and to the credit system. Representatives of the eastern states, on the other hand, had resisted any change in these provisions, as they feared the reduction of land values in the East because of the competition of the abundant lands in the West, and claimed that a reduction of price would drain off the population from the seaboard and cause a rise of wages in the manufacturing states. Each view was seen to be exaggerated.

For the next ten years the sales of public land were very steady, averaging about 1,000,000 acres yearly. The introduc-

HORSE RAKE, 1818

"After the crop is cut, the swath is collected by the hand and tied into sheaves; a small quantity of stalks still remain scattered over the surface; these are commonly collected by the hand rake. To facilitate the latter part of the process, a horse rake has been recently invented." — Flint's *Letters from America,* 1818.

tion of the steamboat upon western waters, the extension of cotton culture through the Southwest, the greater demand for agricultural produce due to the growth in population, all led to a steady demand for land for actual cultivation and settlement. The possibility of using the public lands as an agency of social reform gradually dawned upon the workingmen, and they began to demand, in their papers and conventions, that speculation should stop and the public domain be opened to the people. Land reform became an important issue in the platforms of organized labor. During the years from 1825 to 1832 many schemes of a most questionable character were introduced in Congress for disposing of the lands by sale or

TERRITORIAL GROWTH OF THE UNITED STATES, 1783–1853

gift, for reducing the price, or for handing over the public lands to the States for them to dispose of.

60. Speculation in western lands. — The next few years saw an outburst of speculative activity which has scarcely been equaled since in the United States. This was largely owing to the great increase in land values, the inflated condition of the currency, and the loose banking methods then prevailing. Western lands had been steadily appreciating in value for some years, and as credit and money became easier under the speculative fever of the time, they seemed a favorable object of investment to those who were seeking an easy and rapid increase of wealth. Paper villages were laid out, lands were sold at greatly enhanced prices, often fifty times their original cost, and speculation was fanned to a fever heat. The sales of public lands swelled rapidly, amounting to 3,856,278 acres for the year 1833, and to the enormous figure of 20,074,871 acres for 1836. The sales of 1834–36, 40,000,000 acres, exceeded all that had been sold before. Nor was the speculation confined to western lands; owing to the extension of cotton culture due to the increasing demand for, and the consequent advance in the price of, cotton — from a maximum of 13½ cents a pound in 1833 to 20 cents in 1835 — the value of southern plantations and city real estate rose enormously. The coal lands of Pennsylvania and the manufacturing cities of the East felt a similar impetus. Thus the assessed value of real estate in New York city rose from $143,732,425 in 1835 to $223,742,303 in 1836, and in Mobile from $4,000,000 in 1834 to $27,000,000 in 1837. After the panic of 1837 these values fell even more rapidly.

61. Pre-emption of the public lands. — The rapid peopling of the West and the settlement of the public domain made necessary a better method of disposing of the land to actual settlers than had prevailed. Under the previous system of sales many of the most desirable tracts were bought and held by speculators or for investment. As the incoming population pressed in, it tended in its haste to pass beyond the sur-

veyed lands and to settle in the wilds before they had been opened to settlement. The public domain was theoretically not open to settlement until it had been surveyed and was offered for sale through land offices; as a matter of fact the pioneers did not wait for government surveys, but "squatted" on the land. For the benefit of those already upon the soil and of future residents the pre-emption system was gradually developed. "Pre-emption is a premium in favor of, and

HARVESTING WITH CRADLES

In most parts of America the crops were mowed at this time by the cradle scythe. This was a frame of wood with a row of long curved ribs projecting above and parallel to a broad scythe-blade, for cutting grains and laying them in a straight swath. The cradle acted as a gathering rake and deposited the grain in an even pile with every swing of the scythe. It was invented in 1803 and constituted at the time a greater improvement over existing methods than did the reaper thirty years later over the cradle.

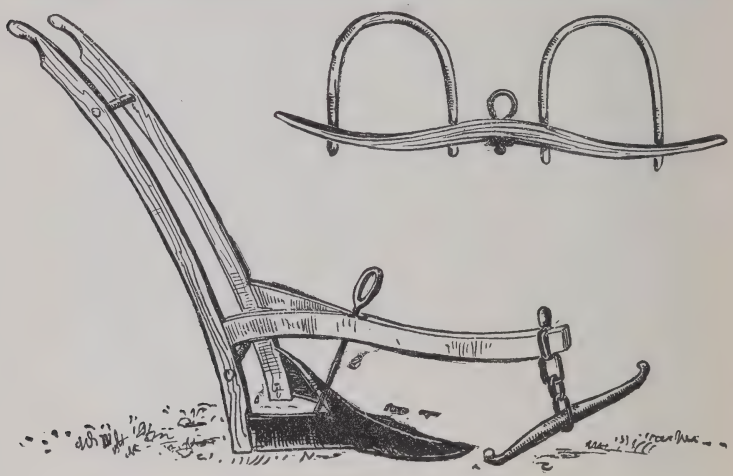
condition for, making permanent settlement and a home." "The essential conditions of pre-emption are actual entry upon, residence in a dwelling, and improvement and cultivation of a tract of land." It was not a free grant of land, but simply a privilege to the settler of purchasing at the

established price the land upon which he had settled, without competition of any sort. The first general pre-emption act was passed in 1830 as a temporary measure and was continued each year until superseded by the permanent law of 1841. The policy of disposing of the public lands primarily for homes had now been definitely adopted. Except during the panic of 1857, the sales during this period were steady and kept pace with the settling of the West, averaging about three and one half millions acres a year.

62. Grants of land. — In addition to its use for purposes of settlement, the public domain of the United States has also been employed to encourage internal improvements, for educational purposes, and in direct gifts to individuals and States. By the ordinance of 1785 it was provided that one thirty-sixth of the public lands should be reserved for the support of the common schools, and since 1848 one eighteenth has been so reserved in all States entering the Union after that date. Beginning with 1841, the lands were recklessly alienated by Congress; during the period 1841–60, 65,701,312 acres were granted to individuals, 105,131,877 acres were granted to States for purposes other than internal improvements, of which the largest single gift was that in 1849 of all the "swamp and overflowed lands" within the limits of any State; and 29,820,337 acres were granted to States and corporations for internal improvements. Of a total of 269,406,415 acres disposed of during the period 1840 to 1860, only 68,752,889 acres were sold, the rest being generously — or improvidently — given away by Congress.

63. Extension of farm area. — The settlement of the fertile country about the Great Lakes proceeded rapidly after the construction of the Erie and other canals had provided an outlet to the Atlantic ports for western produce. Between 1820 and 1840 the population of Ohio increased from 581,295 to 1,519,467; that of Indiana from 147,178 to 685,866; of Illinois, from 55,211 to 476,183; and of Michigan, from 8896 to 212,267. This growth in the population denotes a cor-

responding extension in the cultivated farm area, though statistics showing this were not yet gathered for the census. While some of those who joined in the westward movement took up land for speculative purposes, the majority had the distinct purpose of becoming farmers. During this period the tide of settlement pushed out beyond the forest belt, which clothed the whole eastern section as far as Ohio and which made the task of the settler in that region so laborious, and reached the treeless prairies of the West. The cost of preparing the soil for cultivation here was certainly less than



PLOW AND NECK YOKE, 1832

"The plow is different in its construction from that used in Germany, and the oxen are attached to it by a very peculiar yoke, which consists of a long, thick, crooked piece of wood, which is laid horizontally over the necks of two oxen, with two bows underneath, through which the heads of the animals are put." *Travels in the Interior of North America,* by Maximilian, Prince of Wied, 1832.

half what it had been in those sections where the forest had first to be cleared away. "Here," wrote an English traveler, Stirling, "the pioneer is not the backwoodsman with his axe, but the 'prairie-breaker' with his team and plough." Yet there were certain obstacles to the rapid settlement of this

open land: the scarcity of wood made it difficult to build houses or to secure fuel, while drinking water could be obtained only by digging wells from twenty to forty feet, and was not very good at that. The lack of navigable waterways, too, cut off the settlers on the prairie from access to markets, at least until the railway opened up this section. As a result the early pioneer was apt to lead an isolated and dreary existence, which was aggravated by the unhealthfulness of the region.

The population of the southern slave States also increased from 1,200,484 in 1820 to 2,659,085 in 1840, although most of the increase took place in the new Southwest rather than in the old South. The cotton and sugar plantations of the South showed an increase in size after 1840; here alone, with the exception of California, was to be found any considerable number of farms of over 1000 acres. The total values produced on the farms at each decennial date was estimated at $580,000,000 in 1840, $800,000,000 in 1850, and $1,250,000,000 in 1860. In spite of the rapid progress in manufactures and commerce, the country still remained predominantly agricultural, over 40 per cent. of the population being dependent upon agriculture.

64. Improvements in farm implements. — As late as 1830 practically every part of the work of the farm, says Professor Carver, except plowing, harrowing, and drawing loads, was done by hand, that is, with tools that were directed and driven by human muscles. "Small grain was sown broadcast, reaped with a cradle (which was a relatively new invention), and threshed with a flail, or trodden out by horses and oxen. Hay was mown with a scythe, and raked and pitched by hand. Corn was planted and covered by hand, and cultivated mainly with a hoe." Using a cradle and a hand-rake a man could cut and rake about two acres a day, working under much greater fatigue than a modern farmer endures.

By 1860 the farming industry had been revolutionized in respect of practically every one of these processes by the in-

vention and introduction of farm machinery whose motive power was non-human. No period of equal length in the history of agriculture has witnessed such revolutionary changes.

Of far-reaching influence on the extension of cereal production throughout the flat prairie regions of the central West was the invention of various mechanical devices for plowing, cultivating, mowing, reaping, and threshing the crops. The cast-iron plow was in general use by 1825. During the next decade the use of threshing machines spread with great rapidity, and by 1840 comparatively little grain was threshed in any other way. Improvements continued to be invented: up to 1860 the number of patents — 354 — granted for threshing machines was larger than had been issued for any other instrument except the plow and water-wheel, and perhaps grain harvesters and corn-planters. At first the machine merely threshed, but about 1850 separators were added, which separated the grain from the chaff and straw. By 1860 steam-threshers had been introduced, but horse power was still generally used. The first patent for a mowing machine was granted to William Manning, of New Jersey, in 1831, and for a reaping machine to Obed Hussey, of Baltimore, in 1833, which cut grain as fast as eight persons could bind it. In 1834 a patent was issued to Cyrus H. McCormick for an improved reaping machine for cutting grains of all kinds. The prototype of the revolving hay-rake was invented in 1824 and perfected about 1856. Only limited success attended the early introduction of these machines, and it was not until after 1840 that they exerted their transforming influence on western agriculture.

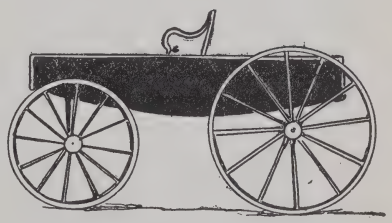
The common use of the reaper dates from about 1845, and the mower a decade later. It was given a great impetus by the success of American machines at the World's Fair in London in 1851 and at an exhibition near Paris four years later. "The triumph of the American reapers," said the official report at London, "worked a new era in agriculture." At the Paris exhibition a trial of mowing, reaping, and threshing machines was made, and of the results a correspondent of

the *New York Tribune* wrote: "Six men were set to threshing with flails at the same moment that the different machines commenced operations, and the following were the results of half an hour's work:

"Six threshers with flails	60 liters of wheat
Belgium thresher	150 liters of wheat
French thresher	250 liters of wheat
English thresher	410 liters of wheat
American thresher	740 liters of wheat"

In the trial of reapers the following was the result in a field of oats: an Algerian machine cut an acre in 72 minutes; an English machine in 66 minutes; and an American in 22 minutes.

65. Other improvements. — The application of machinery to the work of harvesting marked an epoch in American agriculture; there was now no practical limit to production through inability to gather the crop. But the use of machines in harvesting was supplemented, though in a lesser degree, by their application to the cultivation and tillage of the crop, particularly of Indian corn. A variety of cultivators, grubbers, horse-hoes, seed-drills, and similar implements enabled the farmer to substitute animal power for hand culture. Of especial importance were the corn-planters and the two-horse cultivator, which came into use during this period. In a new country like the United States, where labor was still scarce and high, labor-saving machines were indispensable. The chief characteristics of the American machines, were, as they still are, lightness, simplicity, and cheapness, in all of

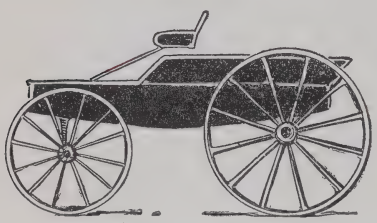


IMPROVEMENT OF THE WAGON. I

The plain springless box wagon was introduced in 1810.

which qualities they far excelled those of England and Europe. By 1860 the total value of agricultural implements manufactured in the United States was $17,802,514.

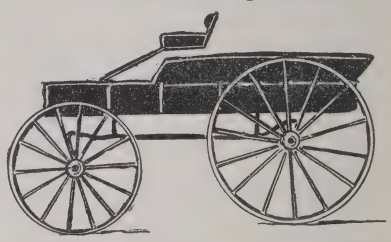
During this period, too, commercial fertilizers were introduced into the United States, and the application of chemistry to agriculture, first reduced to a science by Liebig, was put in practice, though as yet to a very limited extent.



IMPROVEMENT OF THE WAGON. II

In 1820 the seat was put upon a spring.

But great as was the progress in cultivating, harvesting, and cleaning the grain, it was still greater in grain transportation. The most remarkable progress was made during this period by the western States (Ohio, Indiana, Illinois, Michigan, and Wisconsin). In these five States between 1850 and 1860 the number of miles of railroad grew from 1275 to 9616; the production of corn, oats, and cattle increased over 50 per cent., and of wheat and potatoes 100 per cent. At the same time the cash value of the farms in these States almost t r e b l e d. The rivers and canals were quite inadequate to transport this increased production, which was made possible only by the rapid extension of railroads.

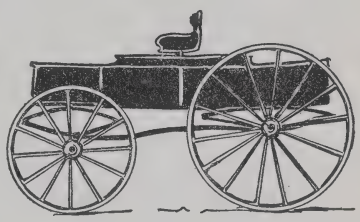


IMPROVEMENT OF THE WAGON. III

The thorough-brace was placed under the body of the wagon in 1825.

66. Benefits of farm machinery. — The saving effected by the use of these improved implements was estimated in the census of 1860 as equal to more than one half the former cost of working. " By the improved plow, labor equivalent to that

of one horse in three is saved. By means of drills two bushels of seed will go as far as three bushels scattered broadcast, while the yield is increased six to eight bushels per acre; the plants come up in rows and may be tended by horse-hoes. . . . The reaping machine is a saving of more than one third the labor when it cuts and rakes. . . . The threshing machine is a saving of two thirds on the old hand-flail mode. . . . The saving in the labor of handling hay in the field and barn by means of horse-rakes and horse-hayforks is equal to one half." But the real gain to agriculture by the use of these machines cannot be measured merely by noting the increased area that can be cultivated by a given labor force, or the saving in labor cost. It consists rather in the saving of time, which permits a large crop to be harvested at the moment of maturity, without the loss by delay or exposure, that is, if grain is not harvested in about ten days it is lost, falls to the ground or is spoiled. The whole labor force of the United States in 1860 would probably have been insufficient to have harvested in season the crops of that year by the methods of a generation previous.



IMPROVEMENT OF THE WAGON. IV

In 1825 the elliptical spring was introduced over the two axles.

The expansion that was taking place in agriculture during this period can best be seen in the following table. During the twenty-year period, 1840–1860, there was a round doubling in the case of most of the products, but cotton somewhat more than trebled, while oats and potatoes showed only about a fifty per cent growth. On the whole the expansion of agricultural production was more rapid than the growth either of the population or the means of transportation; it measured fairly well the development of wealth.

PRINCIPAL AGRICULTURAL PRODUCTS, 1840–1860

Product (In Millions)	1840	1850	1860
Improved farm land, acres	....	113.0	163.1
Corn, bushels	377.5	592.0	838.8
Wheat, bushels	84.8	100.4	173.1
Oats, bushels	123.0	146.5	172.6
Potatoes, bushels	104.2	104.0	153.2
Hay, tons	10.2	13.8	19.0
Butter, lbs.	...	313.3	459.6
Wool, lbs.	35.8	52.5	60.2
Cotton, lbs	600.0	960.0	2120.0
Tobacco, lbs.	219.1	199.7	434.2
Rice, lbs.	80.8	215.3	187.1

67. **Cereal production.** — With the extension of the cultivated area the production of the cereals increased enormously; most of it, however, found a market in the growing Southwest, and the lake grain trade did not begin to expand until the end of this period. As corn could not pay the costs of transportation very well, it was converted into whisky or hogs, and sold in the form of salt pork, hams, bacon, etc. Some cattle were fattened on corn and driven over the mountains to the Atlantic seaboard. With the opening of the Erie Canal in 1825, an outlet was afforded to the grain of the West. Wheat began to displace corn as the chief money crop of the northern lake region, and became the breadstuff of the northern population. The center of wheat production was still in western New York, however, and its export from the West did not become important until after the building of railroads. Corn and live stock remained the principal products of the Ohio valley, and were shipped down the Mississippi to the cotton plantations of the South. In 1840, when this crop first appeared in the census, the production of Indian corn amounted to 377,531,875 bushels, and of wheat to 84,823,272 bushels.

68. Changes in farming.—One of the effects of all these improvements in harvesting and marketing the crops was a greater specialization in farming. There was a general change from the self-sufficing system of agriculture, where a farmer produces everything that he needs, to the commercial system, where he specializes on a money crop and buys most of his supplies with the proceeds. The transfer of grain production

First McCormick Reaper, 1831

The first reaper, built by Cyrus H. McCormick, of Virginia, was made at a blacksmith's shop in the Shenandoah valley. These reapers enabled one man with a team of horses to cut as much grain as four men with cradle scythes. McCormick did not take out his first patent until 1834.

to the western States, brought about by improved methods of transportation, had begun the change in New England agriculture which in time completely transformed it. Market gardening increased greatly in New England and the middle Atlantic States, while a little farther west orchard products received greater attention. The two together increased in

value from $3,000,000 in 1840 to $35,800,000 in 1860. On the western farms there was greater specialization in cereal production, which permitted the use of more expensive machinery and more capital.

69. The grain trade of the United States. — Until the building of railroads in the western States the grain trade developed very slowly. With the completion of the system of canals and later of railroads, the grain resources of the lake basin were opened up and the trade greatly stimulated. As late as 1835 Ohio was the only State in the West exporting grain direct to the Atlantic coast. The first shipments of grain from Chicago consisted of 78 bushels of wheat in 1838, while the first shipment from Wisconsin was not made until three years later. By 1860 the total shipments of grain and flour eastward from ports on Lake Michigan alone amounted to 43,211,448 bushels. During the period 1840–60 the production of grain in the northwestern States was estimated to have increased from 218,463,583 to 642,120,366 bushels. Of this, however, only a very small portion was exported; on an average not over 10 per cent. The following census table shows the increase in value of the grain exports:

EXPORTS OF GRAIN, 1823–1863

Years	Aggregate Value of Exports of Grain	Percentage of Increase
1823–1833	$67,842,211	.....
1833–1843	73,303,440	8.0
1843–1853	198,594,871	170.9
1853–1863	512,380,514	158.0

Great as this increase was in the last two decades, especially after the repeal of the British corn laws in 1846, the produce of a single State like Illinois far exceeded the total exports. The real development of the export grain trade belongs to the next period. Practically all of the exports were now made via

the Atlantic ports, the New Orleans grain trade having entirely disappeared; in 1860 only 2189 bushels of wheat were shipped from that port. On the other hand, the southern exports of cotton — which constituted about one half of our total exports in value — and of sugar, tobacco, and rice had grown prodigiously.

70. Home consumption of products. — It is evident that when only 4 per cent. of the cereal production of the country, or 40,000,000 bushels of grain out of a total crop of 1,000,000,000 bushels, is exported, the home market is infinitely more important than the foreign. And yet the greatest interest has always properly enough attached to the export trade, for the price at home of wheat, cotton, and other agricultural exports has been determined by the price ruling in Europe, and more particularly in England. The vast growth of manufactures in the eastern States created a demand in that section for western produce; in 1863 Governor Andrew of Massachusetts estimated that the consumption of western agricultural products in New England amounted to $50,000,000 yearly.

On the other hand, the devotion in the southern States to the cultivation of a few staple crops — cotton, tobacco, sugar, and rice — created profitable home markets for the grain of the Northwest. Much of the corn, too, was not consumed as such, but was fed to stock, especially swine, which were then more easily marketed than the original product. The increase in the tonnage of the lakes, from 76,000 tons in 1845 to 391,220 in 1860, and of railroad mileage, from 2818 miles in 1840 to 30,635 in 1860, sufficiently indicates the growth of the internal trade of the country.

In explaining the progress and prosperity of agriculture during this period due emphasis must be placed upon the widening markets as well as upon the improvements in production. Not only was the domestic market expanding, but there was a growing foreign demand for our products, due to famine and wars abroad, the repeal of the English corn laws, and the growth of industry in that country and in Europe.

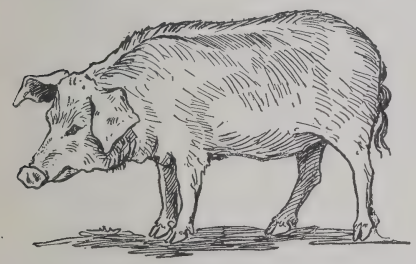
71. Cotton growing. — One of the most important events in the agricultural history of this period was the rise of cotton to first place among the products of the South. It passed tobacco in 1803 and has ever since led all other southern agricultural staples. In other chapters is discussed the relation of cotton culture to slavery; it is sufficient at this place to mention that it was carried on largely by negro slaves, and that by this very fact agriculture in the South was reduced to a condition of stagnation. The wasteful system of land killing was practised even more extensively in the cultivation of cotton than in the case of the cereals; one piece of land was cultivated continuously until it was exhausted, when it was abandoned and a new tract cleared. As the slaves could be trusted only with heavy and crude tools, the introduction of improved agricultural machinery in southern agriculture was rendered impossible. The use of slaves in cotton culture had also the effect of concentrating the industry on large plantations rather than of scattering it over small farms. In all these respects therefore — the crop itself, the kind of labor, the character of the tools, and the size of the farm holding — there was a great difference between agriculture in the South and that in the North. Those sections of the South which were not able to produce cotton were devoted to the raising of other staples which found a ready market in the other sections of the country. Tobacco was cultivated in the northern tier of slave States, and by much the same methods that had prevailed during the colonial period. In Virginia and Kentucky there also grew up a considerable stock-raising industry, especially of horses and mules, for which there was a strong demand on the cotton plantations.

72. Live stock. — The cattle industry of the United States has always flourished on the frontier, and during this period made steady progress in the West. The first fat cattle that ever crossed the Alleghanies were driven from Ohio to Baltimore in the spring of 1805. This proved the beginning of a

profitable trade, and until the railroad began to transport them directly to the eastern market, western cattle were fattened on corn in Ohio during the winter months and then driven eastward in the spring. About 1832–36 a general interest in the improvement of live stock began to be manifested by farmers, largely as a result of the exhibitions at county fairs which had begun about 1810, but were now revived and improved. Durhams, long-horns, Herefords, Devons, and other improved breeds were imported and crossed with the common cattle of the United States, resulting in a great improvement in size, early maturity, and quality of beef.

IMPROVEMENT OF THE HOG. I

The southern pine-woods hog, which ranged wild in the woods at all seasons, developed fleetness of foot, coarse, large bones, and a thick, hard coat.

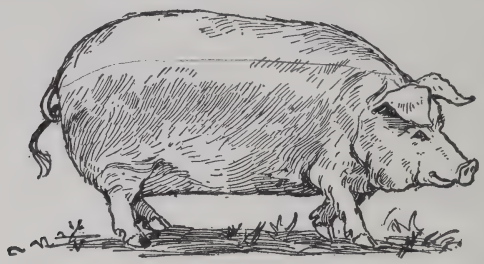


IMPROVEMENT OF THE HOG. II

The western beech-nut hog shows an improvement, but was coarse, long-legged, large-boned, slab-sided, and flab-eared.

The first importation of merino sheep had been made in 1793, but it was not until the embargo forced the people to produce their own clothing that general attention was directed to the raising of fine-wool sheep. Societies were formed in Kentucky and Ohio to improve the breeds by the importation of pure merinos, southdowns and other blooded stock, and great improvements were effected in breeding both for mutton and for wool. These States, with western New York, remained the seat of the industry until after the Civil War. Large numbers of swine were also raised, especially

in Ohio, Kentucky, and Tennessee. Abundant and cheap food existed for them in the mast of the oak and beech forests, and in the corn which became their staple food after the clearing of the forests. Until after the building of improved transportation facilities, many of the hogs of the West were driven



IMPROVEMENT OF THE HOG. III

The improved Suffolk shows the desirable qualities of a hog — small bones, short legs, round barrel, thin coat, ready fattening qualities, and sluggishness.

to Baltimore and Philadelphia to be slaughtered there for the domestic and foreign provision trade; later Cincinnati became the center of the meat-packing industry and remained so until displaced, in 1861, by Chicago.

73. Other Changes. — A notable event was the importation into Ohio of the Percheron stallion Louis Napoleon, from which dates a great improvement in the draft horse. Before this the most prized animals as beasts of burden, in addition to mules, were the Conestoga horses, which were early used to draw the Philadelphia-Pittsburgh stage coach. Some attention had been given to breeding trotting horses and several importations made; a great sensation had been occasioned in 1816 when "Yankey" trotted a mile under the saddle at the Harlem course in New York City in 2.59, but religious sentiment in the North was against speed tests. Trotting did not become a popular pastime until after the introduction of macadam pavements. Up to 1840 the buggy was practically unknown, the common mode of travel being on horseback.

An interesting change was taking place at this time in the kind of animal power used on the farm. As long as crude and heavy implements were used, such as the old bull-plow, the cart, and the clumsy wooden harrow, oxen were generally used, as they were powerful and cheap. With the introduction of farm machinery, however, these slow and stupid animals were displaced by horses and mules, which were better adapted to this purpose.

Between 1840 and 1860 the number of sheep remained almost at a standstill, while the increase in neat cattle and swine did not keep pace with the growth of the population. All of these animals were raised chiefly for slaughtering. While the pork-packing industry did not assume large proportions until the decade of the Civil War, in 1860 over 400,000 hogs were slaughtered annually at Cincinnati, and 230,000 at Chicago; the following year Chicago took first place. An improvement was introduced into the dairying business during this period, which in time worked a revolution in that branch of farm work. Up to 1850 all the butter and cheese was made on the farm, but in the next year the associated system of dairying known as the American system was inaugurated by the invention of the cheese-factory, of which twenty-one were built by 1861. The development of dairying led to attempts to improve the breeds of dairy cattle, and a large number of pure-bred Jerseys were imported and also some Ayrshires.

The following table shows the increase in live stock:

LIVE STOCK IN THE UNITED STATES, 1840–1860

Live stock (in millions)	1840	1850	1860
Horses and mules	4.3	4.8	7.3
Neat cattle	14.9	18.2	25.6
Sheep	19.3	21.7	22.4
Swine	26.3	30.3	33.5

74. Condition of the farmer. — The economic position of the American farmer during this period was one of increasing prosperity, interrupted only temporarily by banking troubles, by panics, or by crop failures. The building of internal improvements was furnishing sections of the country with better means of transportation and affording access to markets. The spread of cotton culture brought in large profits to southern planters and provided an outlet for northern produce, while the growth of manufactures contributed also to the development of a home market. The life of the settlers in the new West was not very different from that of the early colonists in the eastern States. A rude abundance of the necessaries of life was everywhere to be found, and a generous hospitality was remarked by travelers as a characteristic of the people. Breadstuffs — wheat and corn — were plentiful and cheap. Game was abundant, and cattle and hogs multiplied rapidly and foraged for themselves in the woods, so that animal food was a usual article of diet. The settler's garden furnished him all the vegetables necessary for his table, with little attention on his part; there was usually a superfluity of potatoes, squashes, melons, and other common vegetables. Tomatoes, curiously enough, were grown as ornamental shrubs under the name of "love apples," but were not eaten until about 1830, as they were generally supposed to be poisonous. Apples, peaches, pears, and other fruits were fairly plentiful, but were of poor quality.[1] Salt and iron alone were scarce, and, in the prairie region, wood; elsewhere it was

[1] Mrs. Trollope, in her *Domestic Manners of the Americans,* writes as follows of her experience in Ohio: "All the fruit I saw exposed for sale in Cincinnati was most miserable. I passed two summers there, but never tasted a peach worth eating. Of apricots and nectarines I saw none; strawberries very small, raspberries much worse; gooseberries very few and quite uneatable; currants about half the size of ours, and about double the price; grapes too sour for tarts; apples abundant, but very indifferent; none that would be thought good enough for an English table; pears, cherries, and plums, most miserably bad."

abundant. Clothing was of homespun, and in the outlying districts often of leather and skins. Where the population was dispersed, the life of the settler was often lonely and marred by the prevalent malaria. But these were temporary hardships, to be endured for the sake of the certain increase in the value of the land and the satisfaction of being one's own master.

75. Character of agriculture. — American farming was still characterized by the wasteful and exhausting methods of cropping without fertilizing that prevailed in colonial times. This was caused partly by the fertility of the soil and the abundance of cheap land, and partly by the unsettled nature of farming and the unwillingness to sink capital in improvements. "It seldom happens," wrote Tocqueville in 1840, "that an American farmer settles for good upon the land which he occupies; especially in districts of the far West he brings land into tillage in order to sell it again and not to farm it." The same thing was remarked by another traveler: [1] "There is scarcely any such thing in New England and New York as local attachment . . . Speaking generally, every farm, from Eastport in Maine to Buffalo on Lake Erie, is for sale. The owner has already fixed a price in his mind for which he would be willing and even hopes to sell, believing that with the same money he could do better for himself and his family by going still farther West. Thus, to lay out money in improvements is actually to bury what he does not hope to be able to get out of his farm again, when the opportunity for selling presents itself." So long as land was held only as a speculation, in order to sell again, farming could not be brought to a very high state of development. The American farmer of this period has been likened to a miner, who extracts wealth from the soil, but does not restore it. Such methods were directly promoted by the prevailing practice in regard to land holding and sale, which made the farmer, in part at least, a speculator as well as an agriculturist. American agri-

[1] J. F. W. Johnston, Notes on North America, p. 163.

culture has suffered from this fact down to the present time. For the farmer of that time, however, this was the most economical method, since capital and labor were scarce while land was plentiful and could therefore be used wastefully.

SUGGESTIVE TOPICS AND QUESTIONS. CHAPTER V

The land problem, in its governmental aspect, was how to get the public lands into the hands of settlers; in its social aspect, it was how to utilize the land so as to produce the largest returns. The response of the American farmer to this problem was prompt and may be read in the agricultural development of this period.

1. What were the methods and implements in use before the introduction of the cast-iron plow, the reaper, mower, thresher, and other improved implements mentioned? [Eighty Years Progress; Eighth Census (1860), vol. Agric., Intro., xi-xxiv; Twelfth Census (1900), X, 352–364; G. Holmes, Progress of Agric. in U. S.]

2. Was there any connection between the different tariffs and the sheep-raising industry? Was there a duty on cattle? Why on one and not on the other? [F. W. Taussig, Tar. Hist., 239, 257, 292, 330; W. D. Lewis, Our Sheep and the Tariff; W. M. Grosvenor, Does Protection Protect; C. W. Wright, Wool-growing Industry and the Tariff.]

3. Describe the early introduction of improved merino sheep into this country. Is sheep-raising successful in the United States to-day? [Eighth Census (1860), vol. Manuf., 26–32; Coman, 182.]

4. Would you call a period of advancing prices and speculative activity, such as existed in 1834–7, "good times"? [D. R. Dewey, 224–231.]

5. What proportion of your classmates to-day live in the same State or country in which their parents were born? What does this seem to indicate as to local attachment? Has it any effect on good government, in our cities or elsewhere?

6. What were some of the schemes mentioned in sect. 212 for disposing of the public lands?

7. Was the wish to own a home or the hope of a rise in the value of the land the main reason, in your opinion, for the taking up of the western lands?

8. In what States were the land sales greatest? What was the growth of population during the decade 1830–40 in these States? Does this show anything as to whether the lands were bought for actual settlement?

9. What effect did the sale of land to speculators have upon its actual settlement? [Kettel, in Hunt's Merch. Mag., XI, 112.]

10. Do the governments of other countries own land? Would it have been better for the United States to have retained the ownership of most or all of the land, instead of giving it away? [H. C. Adams, Sci. of Fin., 247–254; C. F. Bastable, Pub. Fin., 169–190; A. Marshall, Princ. of Econ., 500, n. 2; C. J. Bullock, Introduction, 16; A. B. Hart, in Quart. Journ. Econ., I, 169.]

11. Are the statements made in sect. 228 true to-day to your knowledge?

12. Trace the changes in the agricultural products of some typical State, as Massachusetts, New York, Ohio, Iowa. [Census vols. on Agric., 1850–1900.]

13. Trace the westward movement of agriculture in the United States since 1850. [Twelfth Census (1900), vol. Agric., part 1, 37.]

14. Is the price of wheat and cotton in the United States fixed by the price offered in London or New York? Why? [Bullock, Introduction, 185; A. Marshall, Principles, 403.]

15. What objections can you think of to the introduction of improved farm machinery? [M. B. Bateman, in Ohio Agric. Rep., 1869; H. W. Quaintance, 40; Rep. Ind. Com., X, 132, 256.]

16. Does the introduction of farm machinery increase or reduce the number of farm laborers? [Quaintance, 29–45; E. W. Bryn, Progress of Invention, chap. 16.]

17. Why was Cincinnati the seat of the pork-packing industry prior to the Civil War? Why does Chicago now hold first place? [C. C. Adams, Com. Geogr., 80.]

18. What was the attitude of foreign nations to the reception of our wheat during this period?

19. The per capita consumption of wheat in the United States was seven bushels in 1860. What is it to-day? Has the amount raised kept pace with the increase in population? What do the figures show?

20. What was the quality of the fruit in the United States about 1840? How has it been improved? [Mrs. F. M. Trollope, Domestic Manners of the Americans, 88; L. H. Bailey, Plant Breeding, 4th ed., 227–314.]

21. Did the improvements in transportation during this period have any effect upon specialization in farming?

22. Did the Pre-emption Act benefit land speculators or settlers?

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CHAPTER VI

SLAVERY AND THE SOUTH

76. The development of the South. — While the country as a whole had made marvelous industrial progress during this period, the benefits were confined largely to the North and West. The great advances in manufactures, in agricultural improvements, and in commerce had scarcely affected the South. The reason for this industrial backwardness was the specialization in cotton growing, which was bound up with the institution of slavery, and to a fuller discussion of slavery as a system of labor we must now turn. Two thirds of the population and a still greater proportion of the wealth of the country were in the northern States in 1860. Of the $3,736,000,000 of wealth produced in 1859, over $2,818,000,000 came from northern farms and factories. By far the greater part of the manufacturing and mining industries of the country were situated there. In fact, the South had lagged far behind the North in the industrial advance of the previous half century. A southern writer, Trenholm, has the following to say on this point: "The whirl and rush of this progress encompassed the South on every side. . . . Yet alone in all the world she stood unmoved by it; in government, in society, in employment, in labor, the States of the South, in 1860, were substantially what they had been in 1810, when the abolition of the slave-trade had impressed upon their development the last modification of form of which it seemed susceptible."

77. The growth of slavery. — With the increased demand for cotton, the cotton belt had gradually spread westward until in 1860 it stretched from the Atlantic across the southern

States and over the greater part of Texas. At the same time the production of cotton had almost trebled between 1840 and 1860. Hand in hand with this extension of cotton territory and of production had proceeded the growth in the number of slaves, from 677,897 in 1790 to 2,009,043 in 1830, and 3,953,760 in 1860. How dependent the extension of slavery was upon the growth of cotton can easily be seen by noting the concentration of slaves in the cotton-growing States. In 1840 over two thirds of the slave population were in the ten cotton-growing States, while in 1860 nearly three fourths were to be found there. Of this large number a considerable proportion had been added by an illicit slave-trade with Africa, but the greater part was the natural increase of the slave population. Slaves were exported mainly from the border States of Virginia, Maryland, and Kentucky, where there was diminishing opportunity for negro employment, resulting in a vigorous slave-trade with the cotton-growing States. Olmstead calculates that the average importation of slaves into seven of the southern States during the decade 1850–1860 was about 25,000 annually.

COTTON PICKING

Cotton picking began about the first of August in the eastern States and continued until the middle of December in the West. The field had to be gone over again and again, as only the ripened blooms were picked each time. This was a tedious but not laborious task and employed women and children as well as men. An average hand would pick about 200 lbs. a day, while some skilled pickers reached as high as 400 or 500 lbs. a day.

78. Nature of slavery. — Slavery is essentially a system of forced labor; the worker does not reap the reward of his toil and is consequently less interested in its results. Under a system of free labor the full returns of his effort belong to the laborer; the motive to exertion is self-interest instead of fear, and consequently the diligence and application are many times greater. On the other hand, the whole fruit of the slave's toil belonged to his master, who had to make in return only a small outlay for maintenance. How far the small running expenses offset the meager returns from slave labor was the economic problem involved in the system of slavery. Was it more remunerative to the slave-owning population than a system of free hired labor, quite irrespective of the rights or interests of the slaves? Southern writers before the Civil War insisted that the prosperity of the South was bound up in the "peculiar institution," and that to destroy slavery was to ruin southern industry; as a matter of fact, nearly nine tenths of the cotton was raised by slave labor. It may fairly be admitted that by 1850 the question of free versus slave labor was no longer a debatable one. The existence of slavery and the plantation system had driven out the supply of white yeomen labor which might have done the work of raising cotton, and the plantation owners were unable to make use of any other than slave labor. When the gin was invented cotton was generally raised by white farmers. As its culture spread out to the richer lands of Alabama and Mississippi the large plantation with slave labor competed successfully with the small farm and finally supplanted it. The independent white farmer then retreated to the poorer lands, where he grew some cotton, raised live stock, or engaged in mixed farming. If there had been no slaves white labor would have developed the cotton industry throughout the South, though of course more slowly.

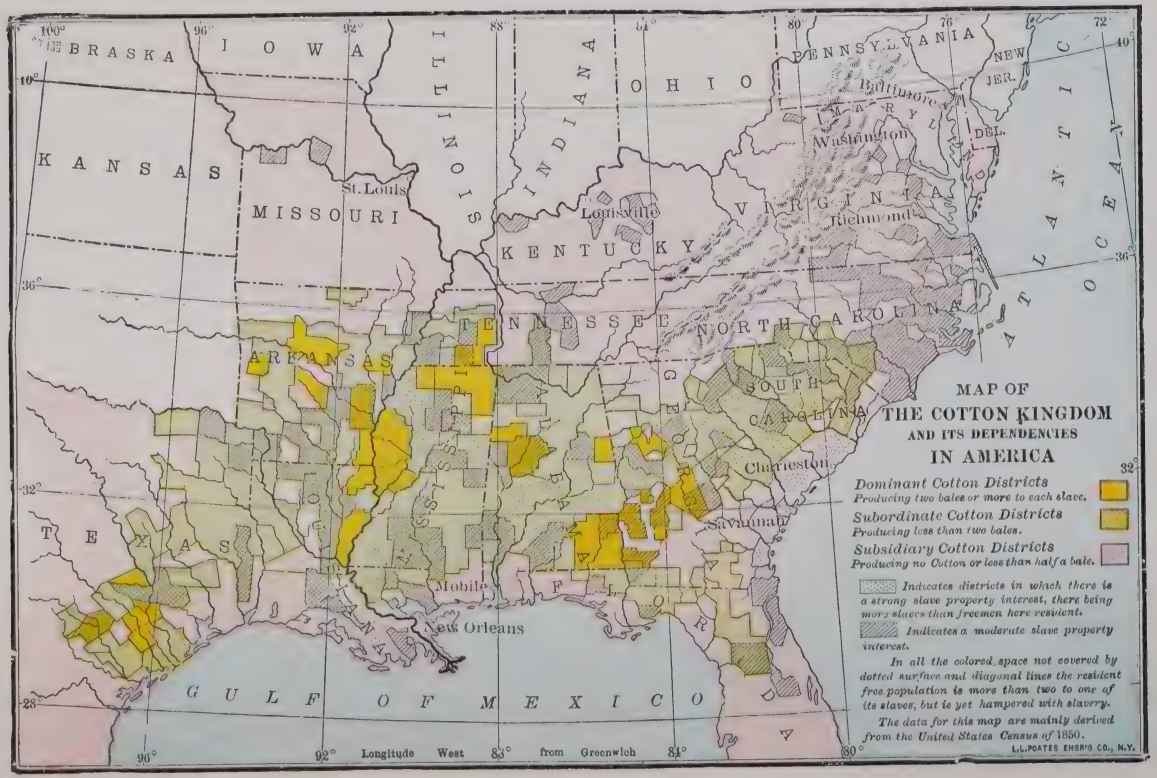
79. The plantation system. — By a plantation is meant a large agricultural unit in which the laboring force, generally of a large size and in bondage, worked under supervision in

the production of a staple commodity for sale. On a typical farm the laboring force would be small, the production would not be subject to regular routine, and the commodities might be raised for home consumption. "The plantation system was evolved," says Phillips, "to answer the specific need of

COTTON LEVEE AT NEW ORLEANS

Beginning about the first of September, the cotton is picked; after being ginned it is sent to the interior markets for sale. The cotton bought for export is then sent to the seaports, whose wharves are loaded with bales from October to January. New Orleans is one of the principal cotton seaports.

meeting the world's demand for certain staple crops in the absence of a supply of free labor." Under slavery the large plantation system was almost a necessity. Both the nature of the crop and the character of the labor rendered cultivation on a large scale the most economical. Intensive methods of


MAP OF
THE COTTON KINGDOM
AND ITS DEPENDENCIES
IN AMERICA
Dominant Cotton Districts
Producing two bales or more to each slave.
Subordinate Cotton Districts
Producing less than two bales.
Subsidiary Cotton Districts
Producing no Cotton or less than half a bale.
Indicates districts in which there is a strong slave property interest, there being more slaves than freemen here resident.
Indicates a moderate slave property interest.
In all the colored space not covered by dotted surface and diagonal lines the resident free population is more than two to one of its slaves, but is yet hampered with slavery.
The data for this map are mainly derived from the United States Census of 1850.
J.H. COATES ENGR'G CO., N.Y.
NEBRASKA
IOWA
KANSAS
MISSOURI
ILLINOIS
INDIANA
OHIO
PENNSYLVANIA
NEW JER.
MARYL.
DEL.
ATLANTIC OCEAN
St. Louis
Louisville
Baltimore
Washington
Richmond
KENTUCKY
VIRGINIA
TENNESSEE
NORTH CAROLINA
SOUTH CAROLINA
ARKANSAS
MISSISSIPPI
ALABAMA
GEORGIA
TEXAS
Charleston
Savannah
Mobile
New Orleans
FLORIDA
GULF OF MEXICO
100°
96°
92°
88°
84°
80°
76°
72°
40°
36°
32°
28°
Longitude West 83° from Greenwich 84°

farming were seldom possible under the indifferent and wasteful slave system. Consequently, the colonial method was persisted in, of cropping a piece of land until it was exhausted and then moving on to a fresh piece. Such a system required practically unlimited quantities of new and fertile lands; the need of new lands for cotton growing was indeed an important factor in the effort to widen our boundaries by the inclusion of Texas, Mexico, and the lands to the southwest. This method involved at once an enormous waste of natural resources and a rapid exhaustion of the soil. In every southern State there were enormous tracts of exhausted and abandoned cotton lands; in fact the uncultivated land far exceeded the cultivated. The following table[1] shows the difference in this respect between the different parts of the country:

AGRICULTURAL DEVELOPMENT IN FREE AND SLAVE STATES, 1860

	Free States and Territories	Border States (Ill., Md., Ky., and Mo.)	Slave States
Improved land, acres	88,730,678	17,547,885	56,832,157
Unimproved land, acres	72,983,311	27,474,315	143,644,192
Total quantity, acres	161,713,989	45,022,200	200,476,349
Cash value	$4,091,818,132	$702,518,382	$1,850,708,493
Average value per acre	$25.30	$15.60	$9.28
Agricultural implements, value	$142,077,802	$21,068,903	$82,971,438
Live stock, value	$574,067,208	$133,484,109	$381,778,598

80. King Cotton. — There was, as we have seen, a growing concentration in the South upon the cultivation of cotton. For twenty-five years the price of cotton had been pretty steadily falling, until it reached less than six cents a pound in 1845; the advance to nearly fourteen cents in 1857, occasioned by the expansion of manufactures in England after the tariff reforms of 1842–46 and the development of cotton manufacturing in France, greatly stimulated its cul-

[1] E. C. Seaman, Progress of Nations, II, 572.

tivation. In the decade 1850–60 the production per inhabitant in the southern States of every important cereal product, of cattle and swine, and even of the products peculiar to the slave States, as flax, rice, and sugar, fell off absolutely, while in the production of tobacco the increase was relatively less than in the northern States. In the case of cotton alone there was a relative as well as an absolute gain; it more than trebled in the twenty years, from 1,500,000 bales in 1840 to 5,300,000 in 1860. It is evident that almost the entire labor force and capital of the South were being directed into the one channel, the production of cotton. In 1820 the production of cotton had equaled 109 pounds to each slave; by 1853 it was 337 pounds per slave. These figures show a great concentration of slave labor upon cotton growing. There was indeed truth in the statement so often made, that "Cotton is King." Seven eighths of the world's supply of that staple was grown in the South. The expanding economic demand for the one staple which could be grown under slavery caused an extension of the slave system and entrenched it still further. This, in turn, had yet other consequences of great influence upon the South.

81. Advantages of slave labor. — There were certain surface advantages in a system of slavery. After his original investment, the slave-holder paid only the cost of maintaining his slaves and then possessed himself of their entire output. As a result of his absolute control over his slaves, the owner could direct, organize, combine, and move them as he saw fit for the attainment of his ends. On the other hand, in order to utilize to the utmost these advantages, those crops had to be cultivated which would permit of their application in the highest degree. Of all crops cotton conformed most perfectly to the conditions necessary to a profitable use of slave labor. Cotton culture was very simple, requiring few tools and only routine work. Furthermore, it gave employment for nine months in the year, so that the slave was idle very little of the time. And, most important of all, it permitted the organiza-

tion of labor on a large scale; a single slave could not cultivate more than three or four acres (as compared with thirty or forty acres in the case of corn), and they could therefore be more compactly massed than in the case of cereal crops. Owing to their ignorance and lack of versatility, it was possible to employ the negroes only on staple crops which called for mechanical labor. The existence in the South of a crop, like cotton, which met these requirements in a high degree, firmly entrenched slavery and caused its rapid extension.

82. Defects of slave labor. — That the Negro slave, at best only a generation or two removed from African barbarism, should have remained below the industrial standard of the white man, with his centuries of training, was natural. When to inherited incapacity are added the defects of the system of slavery, one cannot feel surprised at the inferiority of slave labor. Since his labor was forced, the slave gave it reluctantly; he put as little strength and earnestness into his work as was compatible with safety from flogging. Olmsted concluded that slaves were hardly one half as efficient as free laborers. This disinclination to work, and the frequent shamming it led to, necessitated the use of highly paid overseers, which tended to offset the cheapness of the slave labor. Another characteristic was its ignorance, clumsiness, and wastefulness. Only the heaviest and simplest tools could be used; improved implements and machinery and fine live stock could not be entrusted to the slaves. The inefficiency of slave labor as compared with the responsible and intelligent free labor of the North was thus greatly augmented. As it was impossible to introduce improvements in methods of agriculture or labor-saving devices into the South, this section of the country tended continually to fall farther behind the rest of the nation in the relative production of wealth. Finally, the lack of interest, of elasticity, and of versatility of slave labor confined the southern States to a few staple agricultural crops, and entirely prevented any diversification of industry or the rise of manufactures.

But the disadvantages of slavery were not confined to the character of the labor only. A defect of another kind was the difficulty a young man of small means experienced in getting a start in a slave district. Land was cheap, but to purchase the necessary labor force necessitated a large investment of capital — much more than was required for the land and live stock. It was difficult for any one to become a planter unless he had inherited slaves or had wealth. A farmer in the Northwest could expand his operations with very much less capital. Even in the case of wealthy planters the necessity of locking up a large amount of capital in slaves probably held the labor force down to a point below its most economical expansion.

83. Effect on the production of cotton. — The result of such a system was first that the production of cotton, great as it was, did not begin to equal the capabilities of the South. Only a small part of the land was cultivated; in 1850 De Bow calculated that the entire cotton crop of that year was grown on only 5,000,000 acres. And, secondly, since its cultivation depended now largely on slave labor, its production increased only with the growth of slavery. As this form of labor was increased at the best more slowly than similar supplies of free labor would have been, the system of slavery stifled the progress of the South even in that branch of production in which it was supposed to excel and to which it had sacrificed all others. There was no equilibrium between supply and demand; since his capital was all invested in slaves and cotton lands, the planter found it practically impossible to decrease his production in times of over-supply and equally difficult to increase it rapidly when the price rose. Cotton growing was thus extremely uncertain and speculative. The production of cotton probably lagged behind the economic demand during the decade and a half before the war, as is shown by the rising price of that commodity and by the great increase in the price of slaves. In 1840 the average value of all slaves dependent on cotton culture was estimated by De Bow at

$500; twenty years later Olmsted found that good field hands were worth $1400 on the average, while as high as $2000 was sometimes paid.

84. The economic cost of slave labor. — That slavery involved an economic loss to the nation and also to the South as a whole is evident. Was it profitable to the slave-owner? The items involved in the yearly cost of a slave to his master were many, including interest on capital invested in him, cost of maintenance (food, clothing, and lodging), depreciation, taxation, and insurance against death, sickness, and flight. Did these items amount to more or less than the wages of a free laborer? On this point may be quoted the testimony of a slaveholder from Kentucky about 1840, as reported by the English traveler, J. S. Buckingham:

"He said he had not only made the calculation, but actually tried the experiment of comparing the labour of the free white white man and the negro slave; and he found the latter always the dearer of the two. It took, for instance, 2000 dollars to purchase a good male slave. The interest on money in Kentucky being ten per cent, here was 200 dollars a year of actual cost; but to insure his life it would require at least five per cent more, which would make 300 dollars a year. Add to this the necessary expenses of maintenance while healthy, and medical attendance while sick, with wages of white overseers to every gang of men to see that they do their duty, and other incidental charges, and he did not think that a slave could cost less, in interest, insurance, subsistence, and watching, than 500 dollars or £100 Sterling a year; yet, after all, he would not do more than half the work of a white man, who could be hired at the same sum, without the outlay of any capital, or the incumbrance of maintenance while sick, and was, therefore, by far the cheaper labourer of the two."

The diet of the slaves was coarse but wholesome; cornmeal, with molasses, and generally bacon, were the staples. The clothing was of the coarsest, and the cabins, while rude, were

probably as good as the inmates could appreciate. Any comparison between slave labor and white free labor must be misleading, for many of the defects in the system were due to the fact that the slave was a Negro as well as a bondman. The real problem involved was that of the relative efficiency of slave and free Negro labor, an answer to which is the solution of the labor problem of the South to-day.

85. Character of plantation management. — The defects of the system were, however, not wholly due to the quality of the labor; the incapacity of the masters was also responsible for the failure of agriculture in the South. The absence of rotation or diversification of crops and of the use of fertilizers to prevent the exhaustion of the soil, of improved live stock, of machinery, building, and fences; in short the lack of a scientific agriculture, even among the small planters without slaves, was a frequent matter of complaint in southern journals and conventions. Large plantations were the rule: the average size of the farms in the ten cotton States in 1850 was 273 acres, and this had considerably increased by 1860. Some of the cotton plantations contained over 10,000 acres. These were confined, however, to the rich alluvial lands of the Mississippi bottoms. On the poorer and less fertile soils of the Piedmont and upland regions, which were illy adapted to plantation methods, small farms were the rule. On the large plantations the management was generally left to an overseer, who sought only to obtain the largest possible crop without regard to the future. Absenteeism of the owner was not frequent, as the planter's life was regarded as an ideal one. But the planters felt a contempt for labor, were often unenterprising and lazy, and did not develop their estates. Moreover, the profits secured from cotton production, instead of going to improve the land, were spent unprofitably or sunk in the purchase of fresh fields and additional slaves. The capital of the South was thus invested in fixed forms which tied it down to prevailing methods and permitted no improvement or diversification from year to year.

86. Moral effects of slavery. — The effects of slavery obviously did not end with the economic losses involved; more insidious and harmful were the moral results. Not only were the marriage relations among the slaves loose in the extreme, but they were rendered still more so by the breaking up of families through sale. Such a state of affairs, together with the possession of unlimited power on the part of masters and lax morals on the part of female slaves, reacted upon the relations between the whites and blacks. Of the treatment of slaves it is difficult to speak with accuracy. On the large cotton and sugar plantations, especially in the malarious rice-fields of Georgia and South Carolina, the Negroes suffered most. Here they were under the direction of overseers and were driven and herded in gangs. House servants and those owned in small numbers were usually treated with humanity and even consideration. The possession of absolute power by practically irresponsible masters must often have led to the abuse of that power and to inhuman conduct. Flogging necessarily accompanied the system of slave labor, but wanton cruelty in the use of the lash certainly did not rule. The treatment was probably severest in the lower South, but the supervision was strictest in the border States, where there was greater danger of running away. Slaves were regarded as only a form of property; they were sold and transferred like other commodities. Regular slave-markets were held where slave-

RUNAWAY SLAVE

This cut was a familiar illustration in southern newspapers, where it headed the advertisements of runaway slaves. The following is an example of such an advertisement: "Ran away, negress, Caroline; had on a collar with one prong turned down."

dealers auctioned off their human chattels. To the credit of the South it must be said that the slave-dealer was usually a social outcast. Every effort was made to keep the slave from rising, and while religious instruction was generally given, education was strictly forbidden by law.

87. Slavery and the population. — The ownership of the slaves was concentrated in a very few hands. Less than 5 per cent. of a population of 8,000,000 whites in the southern States owned the 3,950,000 slaves in the United States in 1860. Associated with these actual slave-owners were many persons, as merchants, lawyers, and even clergymen, who, while not slave-owners themselves, sympathized thoroughly with them in their attitude towards slavery. There was thus a strong segregation of the races as a result of this institution, but the stratification of neither race had proceeded very far. The Negroes may be differentiated into field hands, and house servants, artisans, mechanics, etc.; and the whites into the slave-owners and the professional and commercial classes at one extreme and the "poor whites" at the other. However, the white farmers tended to concentrate in the so-called white counties, where the soil was less fertile and the transportation facilities poorer, while the slaves with a sprinkling of whites were localized in the more fertile districts. There was also a small and growing number of free Negroes, though most of these were to be found in the North.

88. Progress of the South prevented. — Slavery prevented the growth of population in the South. Although they had started out almost even in 1800, the North had increased much more rapidly, having in 1860 a population of 19,083,927, as against 12,315,374 in the South. Much of this increase naturally came from foreign immigration, which avoided the slave States and peopled the central States and the great Northwest. Greater than this loss, however, was the lack of diversified industries in the South. Not merely was the agriculture confined to a few staple crops, but, most important of all, manufactures and mining were prevented from developing.

The Southern States were rich in natural resources, deposits of iron and coal, timber and water power, but these remained almost absolutely undeveloped prior to 1860. It was impossible to carry on these industries with slave labor, and so long as slavery existed, neither free labor nor capital could be attracted to their exploitation. Of the real and personal property in the country, $10,957,000,000 out of a total of $16,159,000,000 was credited to the northern States in 1859. Industrially and commercially the South remained stagnant, and not until war had abolished slavery was it prepared for the splendid industrial advance upon which it has now tardily entered.

89. Summary: Sectional divergence. — The most striking characteristic of this period was the growing sectional divergence of North and South. The East was developing its manufactures and finding a rapidly expanding market for them in the growing population of the West, while this section was exchanging for these its surplus agricultural products. East and West were rapidly becoming economically integrated and forming together a state that was already almost self-sufficing. The South, on the other hand, while she purchased large quantities of food stuffs and agricultural products from the West and furnished cotton and other staples to the East, was cut off by her "peculiar institution" from intimate social and political relations with the rest of the country. The sectional divergence reached a crisis when the expanding plantation slave system reached out after more land, which the people of the North determined should remain "free soil."

90. Summary: Material Development. — The system of protection to manufacturing industries was early adopted as a conscious policy by the American people, especially after the embargo and the War of 1812 had forced them to begin manufacturing for themselves. As the South, condemned by the inefficiency of slave labor to a primitive agriculture, could not hope to develop manufactures for herself, she naturally objected to paying higher prices to help northern manufacturers.

Thus the tariff first brought to a head the sectional differences, which were later to become so serious, between the slave and the free States.

As yet, however, the country was too new and undeveloped to permit the growth of a purely industrial state; the westward movement was the indication of a national impulse to appropriate and exploit the wealth of a virgin soil. The purchase of Louisiana Territory gave a definite aim to this movement, although it did not initiate it. Hand in hand with the settlement of the western lands went the improvement of the means of transportation. So important was this that both Federal and State governments lent their aid to building turnpikes and canals, but, after some rather disastrous experiences with these, left to private corporations the task of providing the country with railroads. Protection to American industries and the development of internal improvements were the two parts of the "American System," which engaged the energies of the nation during this period. Capital and enterprise began to be diverted from foreign trade to internal development, and the first stage in the decline of the ocean merchant marine commenced. On the whole, it was a period of extraordinary material development, in which the exploitation of its natural resources became the definite aim of the people of the United States.

SUGGESTIVE TOPICS AND QUESTIONS. CHAPTER VI

The first problem of the South, after the invention of the cotton gin, was how to obtain an abundant supply of labor as quickly as possible. Having answered that problem, she had next to ascertain how to organize and use this labor force in the most economical fashion.

1. What differences were there between slavery in the ancient world and in the United States? [R. H. I. Palgrave, Dict. of Pol. Econ., art. Slavery; Encycl. Brit., art. Slavery.]

2. What was the "black belt"? [W. G. Brown, Lower So. in Amer. Hist., 25.]

3. What proof or illustrations can you give to show that the ineffi-

cient methods of the masters were responsible for the industrial backwardness of the South? [E. Ingle, 56–58; F. L. Olmsted, all books.]

4. Mules were generally used on southern plantations instead of horses; why? [F. L. Olmsted, Seaboard Slave States, 47; Ingle, 60.]

5. What effect did the existence of slavery have upon the education of southern white children? [J. F. Rhodes, Hist. of the U. S., I, 343.]

6. What effect did the institution of slavery have upon the attitude of the South to the questions of (*a*) protection and tariff, (*b*) internal improvements? [J. B. McMaster, Hist. of People of U. S., V, 170.]

7. What effect upon their attitude to the annexation of Texas, and the war with Mexico? [M. B. Hammond, 55–58; E. Ingle, chap. 9; Brown, Lower So., 83–112.]

8. Was there any internal migration of free whites from the southern States to other States? To which, and why? [Eighth Census (1860), vol. Pop., 33–34.]

9. What proportion of the total exports and imports respectively belonged to the South? Did this involve a loss to the South? [D. R. Goodloe, Resources and Ind. Conditions of Southern States. Rep. of U. S. Dept. of Agric., 1865, 117; J. D. B. De Bow, Wealth and Resources of the South and West.]

10. What were some of the non-agricultural industries of the South, and how far were they developed? [Ingle, chap. 3; Coman, 249–254; De Bow, *passim*.]

11. Trace the development of manufactures in some typical southern State up to 1860. [Eighth Census (1860), vol. Manufactures, 11–14; Ingle, chap. 3]

12. What proportion of the food, clothing, etc., consumed in the South was raised there? [Ingle, 64; Sir. M. Peto, 308; Eighth Census (1860), Manuf., 67; De Bow, III, 195–207, 285–299.]

13. What was the proportion of large and small farms in the North and South? [E. C. Seaman, II, 572; Eighth Census (1860), vol. Agric., 221.]

14. How much capital was invested in slaves in 1860? If slavery had never existed, how would this wealth probably have been invested? Would the South have been better off?

15. How did the growth of cities in the South compare with those of the North? [Twelfth Census (1900), I, 24–25.]

16. What was the development of railroads in the South? [Ingle, 99; Coman, 252; De Bow, II, 435–454.]

17. Was the movement towards emancipation so strong before 1860 as to lead you to believe that the slaves would have been voluntarily freed in a short time? [Brown, Lower So., 50–83; Coman, 256–258; De

Bow, II, 262–292; Olmsted, Seaboard Slave States, 125–133, 633–637; Eighth Census (1860), vol. Pop., 15–16.]

18. Describe the effects of serfdom and the emancipation of the serfs in Russia. [I. Hourwich, the Economics of the Russian Village, in Columbia Studies in Hist., Econ., and Pub. Law, II, no. 1; N. I. Stone, Capitalism on Trial in Russia, in Polit. Sci. Quart., XIII, 91; P. Leroy-Beaulieu, The Empire of the Tsars and the Russians, I, 403–473, 505–579; V. G. Simkhovitch, The Russian Peasant and Autocracy, in Polit. Sci. Quart., XXI, 569–595.]

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ECONOMIC INTEGRATION AND INDUSTRIAL ORGANIZATION (1860–1900)

CHAPTER VII

THE APPLICATION OF MACHINERY TO AGRICULTURE

91. Effect of the Civil War. — The period from 1860 to 1900 was characterized by the entrance of the United States into the world's markets as the chief source of supply of food products and of raw materials for Europe. During that time the United States assumed the leading place as a producer and exporter of breadstuffs and grains, as she had already of cotton and tobacco. The Civil War affected the agricultural development of the country both directly and indirectly. As a result of the war demand for agricultural products, prices rose rapidly and production was greatly stimulated. At the same time the organization of great armies withdrew thousands of men from the farms and diminished the labor supply, a loss which was but partially made up by the immigration from Europe. One result of the scarcity of labor was the application to agriculture on an unprecedented scale of labor-saving machinery. It has even been asserted that the issue of the Civil War was decided by the invention of the reaper. The number of two-horse reapers in operation throughout the country, in the harvest of 1861, was estimated to have performed an amount of work equal to about a million men. The ultimate victory of the North was no doubt largely due to the fact that during the war the gathering of

the harvests and the development of the Northwest proceeded uninterruptedly. For instance, the wheat production of Indiana increased from 15,000,000 bushels in 1859 to 20,000,000 in 1863, although one tenth of her male population was in the army. In 1865 it was estimated that there were not less than 250,000 reapers in use in the United States, each of which would cut an average of ten acres in a day of twelve hours. On the other hand, the greatest blow struck the South was the establishment of a naval blockade which prevented the marketing of her great staple, cotton.

92. Growth of the grain States. — The population of the grain States (*i.e.*, the North Central division) increased during the decade 1860–70 by more than 42 per cent., and in the next decade by nearly 34 per cent.; this represented an addition to the population in twenty years of over 8,000,000 inhabitants. The opening of new land to settlement stimulated immigration to such an extent that 2,500,000 persons came to the United States during the decade 1860–70, to be followed in the next ten years by 3,000,000 more, a large proportion of whom settled in the middle West. The greatest growth took place in the newer States of the Northwest, although even in the older States, like Illinois, Iowa, and Missouri, the increase was more rapid than the general rate. In the single decade 1870–1880 over 190,080,000 acres, or a territory equal in extent to Great Britain and France combined, were added to the cultivated area of the United States. Again, in the twenty-year period, 1880–1900, there were added to the farm area over 305,000,000 acres. Such a development was made possible by the extension of the railroad system in the grain region, which opened up new areas for cultivation and made it possible to market the product speedily and economically. A powerful influence leading to the settlement of the spring wheat section of the Northwest was exerted by the introduction in the early seventies of the "new process" of reducing wheat to flour. Iron and porcelain rollers replaced the old millstones, the grain being run through half a dozen sets of

rollers.[1] Whereas previously the flour made from spring wheat had been of inferior grade, it was now rendered superior to that made from winter wheat; consequently the price of spring wheat advanced and greatly stimulated the wheat-raising industry of that section. Between 1870 and 1880 the population of Minnesota and the Dakotas, where it was chiefly grown, increased from 453,887 to 915,950.

93. The Homestead Act. — The passage of the Homestead Act in 1862 made easy and profitable the acquisition of a farm home, especially for those with little capital. The fundamental principle of the act was the grant of a free homestead not exceeding 160 acres to the actual settler; after five years' residence the title passed, without charge, to the "homesteader." As a result of this law thousands of people took up the free land of the middle West, over 65,000,000 acres being given away to individuals during the twenty-year period 1860–1880. This fact was the logical outcome of the pre-emption system and has since been the accepted policy of the government in disposing of the public lands. The settlement of the public domain was further stimulated by modifications of the Homestead Act, making it easy for ex-soldiers of the Union armies to acquire title to government land, and by the rising tide of immigration. So rapid was the settlement of free land that by 1880 the "frontier" had entirely disappeared and there was practically continuous settlement from ocean to ocean. Of the Homestead Act the Public Land Commission said: "It protects the govern-

[1] "Spring wheat is especially rich in gluten, which is advantageous in bread-making. But so long as the stones were set close together and the grain reduced to flour at one grinding, the bran, which is coarser in spring wheat, remained with the flour, discolored it, and by absorbing moisture caused it to spoil. The new process consisted in setting the stones farther apart at first and removing the bran in large pieces before reducing the rest to flour. The germ, being oily, is also removed. The roller or "patent" process differs chiefly in that buhr-stones are replaced by rollers, but the principle of successive millings is retained." E. V. Robinson, Commercial Geography, p. 159, note.

ment, it fills the States with homes, it builds up communities and lessens the chances of social and civil disorder by giving ownership of the soil, in small tracts, to the occupants thereof. It was copied from no other nation's system. It was originally and distinctly American, and remains a monument to its originators."

94. Number and ownership of farms. — The increase in the number of farms, from 2,044,077 in 1860 to 4,008,907 in 1880, and to 5,700,000 in 1900, resulted partly from the inclusion in the farm area of hitherto uncultivated lands and partly from the subdivision of existing farms; the former was true principally of the West, the latter of the South. This was a rate of growth more rapid than that of the population. Accordingly, the agricultural population was much better provided with separate farms at the end of this period than at the beginning; between 1850 and 1900 the proportion of farms to the rural population increased from 1 farm for every 14 persons to 1 farm for every 9 persons. This gain represented both the subdivision of old farms and the taking up of new land. The average size of farms declined between 1850 and 1880, owing to the resort to more intensive farming in the eastern States and to the division of the large southern plantations after the Civil War. After 1880 there was a slight increase again in the size of farms (from an average of 133.7 acres in that year to 146.6 acres in 1900) as a result mainly of the inclusion in the census reports of the grazing ranches of the Southwest.

The addition of such a vast area to the improved farm lands — over 425,000,000 acres between 1860 and 1900 — and the accompanying expansion of production, was not without its disadvantages. Although the United States thereby obtained a leading position as a producer and exporter of foodstuffs, there was involved the partial disorganization of agriculture in the eastern States and discontent in the West itself. So eager were the settlers to acquire land on such favorable terms that the taking up of farms proceeded more

rapidly than was justified by the economic demand for the products they raised. There was thus a great over-production, especially of wheat, and prices were greatly depressed. In many cases, perhaps the majority, crops were grown at a loss, the rise in the value of the land being counted as the real reward. The result was naturally an over-supply of farm products, with consequent low prices, which seriously affected land values and production in the older sections of the country and led to a vast amount of discontent among western farmers. This found expression in a series of farmers' movements beginning with the Granger movement of the early seventies and ending with the Populist movement in the early nineties.

The increase in the production of the six principal cereals during this period is shown in the following table:

PRODUCTION OF CEREALS, 1860–1900 (IN THOUSANDS OF BUSHELS)

Year	Indian corn	Wheat	Oats	Barley	Rye	Buckwheat
1860	838,792	173,104	172,643	15,825	15,540	17,571
1880	1,754,861	459,479	407,858	44,113	19,831	11,817
1900	2,666,000	658,500	945,000	110,600	25,500	11,000

95. Ownership of farms. — More important, however, than the expansion of the farm area was the question of farm tenure. In 1880, for the first time, statistics of farm ownership were published in the census, when the gratifying result was revealed that three quarters (74.5 per cent.) of the farms in the United States were operated by their owners. After that the proportion fell considerably, to 71.6 per cent. in 1890 and 64.7 per cent. in 1900, and alarm was expressed that our democratic conditions of land ownership were giving way to a system of tenantry. The reverse, however, seems to have been true, and the growth of the tenant class indicated rather the endeavor of farm laborers and persons of small means

to make themselves independent than the fall of owners to the rank of tenants. This is shown by the steady growth of farm owners, more rapid even than the increase in the agricultural population. The greatest increase in tenant farming was in the South, where the large plantations were being broken up and cultivated by small cash or share tenants.

The division of the plantations of the South and of the "bonanza" farms of the West showed the extension of the small farm system rather than the decline of ownership; a large proportion of the tenant farms in 1900 were under 20 acres. A study of the ages of operating owners, tenants, and laborers strengthens this conclusion. Almost 90 per cent. of the farm laborers were under 35 years of age, 67 per cent. of the tenants were under 45, while nearly 60 per cent. of the owners were over 45 years of age. There was thus, with advancing age, a steady rise from the condition of laborer to tenant and finally to that of owner. Nor did the existence of mortgage indebtedness warrant any gloomy foreboding; taken in connection with the other facts it must be held to represent the struggle of the former tenant to purchase an equity in the land he tilled, or of the small owner to provide himself with the necessary capital for improvements.

96. Regional specialization. — With the change from self-sufficing to commercial agriculture there went on increasing concentration on certain great staples best adapted to the different regions. The production of a few staples on a large scale was made possible by improved farm machinery and transportation facilities and ready access to markets; this specialization in turn stimulated the invention and application of machinery and the development of large-scale methods. In New England, which felt most severely the competition of the fresh wheat and corn lands of the West, resort was had to a more intensive cultivation, or else the land went out of cultivation; dairying and mixed farming were found most profitable. The production of hay and grain employed almost

every farm throughout the North Central and Northwestern regions; corn far outstripped all other grains in importance. In the South cotton was practically the only crop below the thirty-fifth parallel of latitude, while north of this tobacco, grains, and live-stock supplemented but did not supplant cotton. The raising of live-stock was the chief industry in the semi-arid region of the Far West, and was also important generally throughout the northern States. The North Central division constituted the greatest farming section of the country, producing in 1900 half of the agricultural wealth of the country. Within this district Iowa led as our most important farming State, with products valued at $365,000,000.

97. Agricultural machinery. — The application of machinery to agriculture, which had begun before the war, was now made on a still more extensive scale, the value of farming implements and machinery increasing from $246,000,000 in 1860 to $406,000,000 in 1880, and to $761,000,000 in 1900. It was estimated in 1880 that over 10,000 patents had been granted in this country up to that time for implements and machines connected directly with the cultivation, harvesting, and handling of grain. Of these the most important were the threshers (first driven by horse power and then by steam), the reapers, and finally the complete harvester. By means of these improved agricultural machines the average amount of grain that could be harvested, threshed, and prepared for the market, from the standing grain to the marketable product, by a single man per day, was increased from about 4 bushels in 1830 to about 50 bushels in 1880. A few years later Mr. D. A. Wells estimated that the labor of three to four men on the great wheat-fields of Dakota would annually produce, convert into flour, and transport to the seaboard one thousand barrels of flour, or enough for the yearly consumption of one thousand persons. Perhaps the twine binder, more than any other single invention, was responsible for this expansion, for the limit upon production was set by the possibility of harvest-

ing rather than of planting or of growing. The effect on the production of wheat is seen in the growth of the per capita production for the United States from 5.6 bushels in 1860 to 8.7 bushels in 1900. At the same time the cost of wheat bread to the consumer was greatly cheapened.

A Modern Corn Harvester

A machine cutting and binding corn in a Michigan farmer's field. The bundles of corn are afterwards stacked in shocks in the fields for drying, after which the corn is husked, usually by hand, on the field or in the barn.

The greatest development took place on the enormous farms of the Far West; here were used enormous fifty horse-power steam traction engines to operate plows, harrows, drills, harvesting machines, etc. But in the middle West the progress was no less rapid, and the work of planting, cultivating, and

husking corn was carried on by machinery; particularly important in this connection was the "check rower" which allowed the planting of the crop in rows running in two directions, thus permitting cross-cultivation. Mowing machines, horse hay-rakes, tedders, and stackers revolutionized the work of making hay; while potato planters and diggers, feed choppers, and grinders, manure spreaders, ditch-digging machines, and innumerable other implements greatly lessened the hand labor required.

The introduction of machine power had many far-reaching results. It greatly increased the efficiency and mental activity of the workers, and at the same time lessened the physical strain upon them. It has been estimated that in the case of nine of the more important farm crops, in the production of which machinery was much used, the average increase of efficiency between 1830 and 1895 was nearly 500 per cent. Machinery increased the output of farm products; this caused a fall in the price of farm products, and the lessened cost of food benefited all classes; the farmer did not suffer materially from the smaller price per unit, as this was more than offset by the larger output. The increased output and lower prices also brought about a redistribution of the working force of the country. Not being needed on the farm, the farmers' children moved to the city and devoted themselves to other occupations. It has been said that the American farmer during this period was a miner rather than an agriculturist; that he extracted the wealth from the soil without again restoring the lost qualities. With the increased use of farm machinery and the large capital investment required, the modern farmer might fairly be regarded as a manufacturer; agriculture was becoming more of a business and less an art exposed to the caprices of nature.

The motive power for most of this machinery was that of the horse or mule; accordingly the increase in the number of these animals proceeded *pari passu* with that of farm machinery. There were in the United States in 1900 over

24,000,000 horses and mules on the farms alone; whereas, including those in the towns, there were in Germany only 4,184,000, in France 2,903,000, and in Great Britain 2,000,000. "The agricultural supremacy of the United States," wrote Professor Leroy-Beaulieu, "has been won through the combined use of machinery and domestic animals to turn into wealth the fertility of a virgin soil."

GREAT NORTHERN ELEVATOR AND SHIPPING, BUFFALO, N. Y.

Elevators are used for storing grain until it is wanted for use. The larger modern elevators consist of huge steel tanks or bins, capable of holding 500,000 to 1,000,000 bushels. They are usually built by the water and with rail connections, as shown above, so that the grain may be shipped either by water or rail. The vessel at the extreme left in the foreground is a whaleback, a fast-disappearing type on the Great Lakes.

Hardly less important than the invention of agricultural machinery were the improvements in the methods of transporting and handling the grain. As long as it remained in the farmer's hands the grain was carried entirely by hand in bags or sacks and was moved by teams. After it left the farm it was handled and carried in bulk by steam power. A system

of grading and classification was established by which all specific lots of a certain grade were dealt with together in bulk, in the most economical manner. The use of elevators for transferring or storing grain made it possible to unload and elevate the grain, in the best establishments, at the rate of a carload a minute; vessels were loaded in turn from the elevators at the rate of 8000 to 10,000 bushels an hour. The use of such unique methods alone made it possible to handle the growing grain trade of the country.

98. Growth of the international grain trade. — One result of the great movement of grain by steam was the better distribution of the world's grain supply. Before that a short crop in any country meant dear bread in that place, if not famine, but now the shortage of one country was quickly made up by the surplus of another. The exportation of breadstuffs by the United States did not begin on a large scale until after 1860, but during the Civil War the exports increased enormously, partly owing to the fact that the cutting off of the market in the southern States threw a large surplus into the channels of foreign trade. The following decade disclosed an even more astonishing growth. As the increase in cereal production was twice as rapid as the growth of population, a large exportable surplus was grown each year. The exports of wheat and corn — the only two cereals sent abroad to any extent — are shown in the following table:

CHIEF EXPORTS OF CEREALS. AGGREGATE FOR TEN YEARS ENDING

Year	Wheat (bushels)	Wheat Flour (barrels)	Indian Corn (bushels)	Corn Meal (barrels)
1860	51,709,036	27,701,638	54,784,029	2,438,531
1870	187,686,309	30,360,781	102,527,365	2,578,247
1880	550,767,121	37,117,241	439,656,935	3,422,376
1890	1,266,156,082	(1)	584,598,997	(1)
1900	1,730,445,736	(1)	1,131,192,445	(1)

(1) Not given separately; included in previous column.

One interesting change took place in the exports of wheat — whereas in 1830 flour constituted 99 per cent. of the total wheat exported, by 1880 it had fallen to less than 25 per cent. This change was due largely to the protection given by various European countries to the milling interest. As a result most of the American flour still exported went to the West Indies and to the South American countries. The United States was already the most important wheat-exporting country in the world, supplying about half the needs of wheat-importing nations. Russia, Austria-Hungary, and Turkey were the other most important wheat-growing countries, while Great Britain, Switzerland, Italy, and Belgium were our best customers. Of Indian corn only 5 per cent. of the total crop was exported, the rest being used chiefly as a feed crop at home.

99. Failure of the plantation system in the South. — Under the system of slavery a large part of the capital of Southern planters which would otherwise have taken the form of improved lands, buildings, and machinery had been invested in slaves. The 3,953,760 slaves in the South in 1860 were valued at $2,000,000,000; in the planting States this form of property greatly exceeded all others, both real and personal. The Civil War not only swept away this form of property, but resulted in the destruction of buildings, tools, cattle and other capital. The high price of cotton, however — 43 cents a pound in 1865 and 30 cents in 1866 — encouraged the planters to revive its production. Many borrowed the necessary capital, thus introducing on a large scale the system of agricultural credit which has since been so characteristic of southern agriculture, and proceeded to raise cotton with hired labor. This had two unfortunate results: in the first place, there was an over-production of cotton, causing a rapid fall in the price; in the second place, it led to a revival of the old one-crop plantation system, with its concentration on cotton. The wage system which was thus inaugurated was found to be utterly unsatisfactory, as the freedmen were quite irresponsible. The character of the labor and the falling

price of cotton, in addition to the burden of over-taxation under the carpet-bag governments, caused the ruin of many planters, and vast areas of land went out of cultivation. "Plantations that had brought from $100,000 to $150,000 before the war and even since, were sold at $6000 or $10,000 or hung on the hands of the planter and his factor at any price. The ruin seemed to be universal and complete, and the old plantation system, it then seemed, had perished utterly and forever."[1] The total value of farming lands in the South declined over 48 per cent. between 1860 and 1870.

100. The era of small farms. — An era of small farms followed the failure of the large plantation system under free labor, and the large land holdings were broken up to suit small purchasers. Many of the white yeomen and not a few negroes purchased farms of ten to twelve acres, and proceeded to raise cotton on their own account. In Mississippi, for example, there were but 412 farms of less than 10 acres in 1867, and 10,003 in 1870; the number of small farms of less than 100 acres increased 55 per cent. in the South during the decade 1860–70, while the average size of farms decreased from 401.7 acres to 229.8 acres. Nearly 40 per cent.of the laborers engaged in the cultivation of cotton by 1876 were whites, as against about 11 per cent. before the war. In fact, it was mainly the poorer whites who took over the land relinquished by the large *ante-bellum* planters and began the process of regenerating the South. Most of the land was not bought outright by the small farmer, however, but was worked on shares; the system of cash rents was never widespread. Under these systems the methods of production were gradually improved, fertilizers and improved machinery were more generally used, and the average yield of cotton per acre increased from 172 pounds in 1860 to 222 in 1870. The total yield of 2,275,372,000 pounds in 1860, the last uninterrupted year of production under slavery, was, however, not equalled until 1879, when the product was 2,404,410,000 pounds.

[1] H. W. Grady, in Harper's Magazine, 53: 721.

101. The system of agricultural credit. — Although the method of advancing money and supplies on growing crops was practised in the South before the war, the necessities of planters after that event made its use characteristic of

A Modern Cotton-Gin

Gin houses are built nowadays at railroad centers, where the ginning for the neighborhood is done. A modern establishment contains, in addition to the steam-roller gin, which separates the fiber from the seed, various other devices designed to care for the seeds and lint after separation. But the essential elements of Whitney's original gin still remain, though magnified many times over.

southern agriculture. Cotton factors advanced the capital necessary to revive the production of this staple, themselves often borrowing from commission houses, and taking a crop

lien on the growing crop of the planter. When falling prices resulted in the breaking up of the plantation system and the rise of a small tenant and freehold farming class, the system was extended. The lender was now, however, the merchant and country storekeeper, who was personally familiar with the small borrower and who could, moreover, exercise constant supervision over the crop. While economically necessary at first as a means of securing the needed capital, this practice of agricultural credit soon resulted in a system of peonage of the debtor farmer to the merchant who became his creditor, under which the debtor was kept almost in a state of serfdom, working for his creditor until his debts were paid. All supplies must be purchased through the creditor, and the crops must be sold through him, on both of which transactions lucrative commissions were charged in addition to frequently usurious rates of interest.

This system had certain undesirable effects. Since cotton was the most marketable crop and would always sell for cash, the lender insisted that the farmer concentrate his efforts upon cotton growing. In the second place, since the farmer was compelled to buy all his supplies from the lender's store, he was discouraged from growing his own corn or bacon since this would diminish his purchases. As Hammond put it, "The raising of corn would not only give a less marketable crop into the hands of the merchant, but it would eventually lose him his customers, for the raising of his own supplies would release the farmer from the necessity of doing business on a credit basis." Diversification of farming and even rotation of crops were thus prevented in the South.

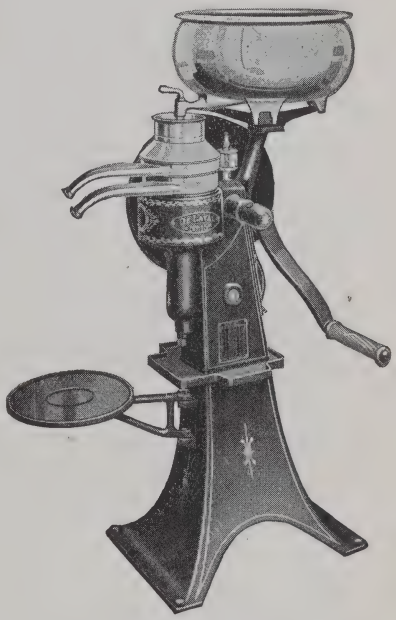
102. Live-stock. — Cattle raising is a frontier industry, and accordingly it has not only been carried on most extensively in the western part of the country, but it has also been a more important industry in the United States as a whole than in Europe. The so-called "native" cattle, probably the descendants of Spanish cattle brought over by Cortez, had multi-

plied rapidly in Texas, and after the Civil War an outlet for them was sought in the North. It was discovered that if Texas cattle were driven to the northern ranges they gained more rapidly in weight than if they remained in Texas; and moreover the beef thus matured was of better quality. By 1870 a clearly defined cattle-trail had been marked out over which an average of about 300,000 cattle were driven northward annually from the breeding grounds in Texas. The points where the cattle-trail crossed the transcontinental railroads became important cattle markets and shipping-points. After 1885 the importance of the cattle-trail began to decline, partly because the taking up of western land in farms reduced the amount of the free range, but chiefly because the railroads were built into the heart of the cattle country and transported the cattle direct to market. They were fattened now in the corn-growing regions of eastern Kansas and Nebraska, Iowa, Missouri, and Illinois.

The process of converting this live stock into food for human consumption began its wonderful growth during this period. The invention of the refrigerator car, the first shipment by which from Chicago to New York took place in 1869, gave a wonderful impetus to the slaughtering and meat-packing industry. Pork-packing, which had been done mainly in the winter up to this time, was now possible during the summer; the number of hogs killed grew from 992,310 in 1860 to 11,001,699 in 1880, and to 28,742,551 in 1900. The dressed beef trade, too, was given a stimulus by the introduction of the refrigerating process. The export of fresh beef dates from 1876, though the exportation of live cattle had already begun in 1870. The total value of the products in the slaughtering and meat-packing industries grew enormously, from about $29,000,000 in 1860 to $303,500,000 in 1880, and $790,000,000 in 1900.

103. Dairy products. — The dairy industry was also revolutionized by the introduction of factory methods in the making of butter and cheese, although a beginning had been

made before the Civil War. Cheese-making developed rapidly under the factory system during the sixties and seventies, and by 1880 more than four-fifths of the cheese produced in the United States was made in factories. There were natural limits to the expansion of the industry, however, in part, the relatively small domestic consumption of cheese, and in part the lack of a foreign demand for the American product. After 1880 butter-making displaced cheese as the leading dairy industry. At that time, however, most of the butter was still made on the farms, and the common form of churn in use for butter making was aptly described by a child's riddle: "Big at the bottom and small at the top, a thing in the middle goes flippety-flop." A great stimulus to the development of factory methods in butter making was given by the invention of the Babcock test for determining the butter-fat of milk, and of the centrifugal cream separator for extracting the cream without having to "set" the milk and wait for the cream



CREAM SEPARATOR

The invention of the Babcock test, for determining the butter-fat of milk, and of the centrifugal machine for separating cream from milk, by reducing the cost, gave a great impetus to butter making. In such a machine the cream is separated from the milk by centrifugal force — the heavier milk being thrown outward from a rapidly revolving cylinder while the cream remains at the center. In a butter or cheese factory the separators and churns are driven by steam; the old processes of "setting" and "skimming" and of churning by hand have given place to factory methods.

to rise. The center of the butter-making industry came to be located in the corn-belt, Elgin, Illinois, being one of the greatest butter markets in the world. The Americans probably consumed more butter than any other people.

POWER CHURN AND BUTTER MIXER

Butter is made by separating the butter-fat in cream form from the milk serum by the process of churning, which consists in agitating the cream. In the old-fashioned dash churn the motion was largely one of stirring, but the modern churn as shown in the pictures secures the result by means of the concussion of the particles upon the sides of the revolving or moving vessel. At the right of the churn is the butter mixer, a revolving table with fluted power roller under which the butter is brought by the revolutions of the table. The mixer works out the butter-milk, a process which was formerly done by hand. The latest churns are fitted inside with rollers, by means of which, after the churning and washing, the butter is worked and salted without being removed from the churn.

SUGGESTIVE TOPICS AND QUESTIONS. CHAPTER VII

During the Civil War the first problem was that of raising sufficient food; this was answered very differently in the North and the South. After the war the problem was one of readjustment, but this also was very unlike in the two sections. The difficulties were enhanced by the

rapid taking up of new land and consequent overproduction, which gave rise to other problems.

1. Describe the effect of the Civil War on the agriculture of the South. [J. C. Schwab, The Confederate States of America, chap. 12; J. W. Garner, Reconstruction in Mississippi, chaps. 4, 16; W. E. B. Du Bois, Souls of Black Folks, chap. 2; Du Bois, Negro Farmer, 79–81; M. B. Hammond, The Cotton Industry, 127; W. L. Fleming, Reconstruction in Alabama.]

2. What was the effect of the increase in the exportation of grain and decrease in that of cotton during the Civil War upon the independence of the Confederate States? [E. D. Fite, in Quart. Journ. Econ., XX, 263–7.]

3. What relation, if any, can be shown to exist between the price of wheat and the development of the West? [T. Veblen, Price of Wheat since 1867, in Journ. of Polit. Econ., I, 68–94.]

4. What were the principal causes of the growth of our grain exports after 1860? [Report of U. S. Com'r. of Agric. 1862, pp. 66–73; 1876, pp. 164–180; 1889, pp. 251–264; 1891, pp. 228–340; Dunn, Amer. Farms and Foods, chaps. 12, 25; Fite, in Quart. Journ. of Econ., XX, 260–262.]

5. The average yield of wheat per acre in England was 35 bushels, and in the United States about 15. Why did England import wheat from the United States?

6. Trace the agitation for the free distribution of the public lands. Do you consider it a wise measure? [K. Coman, 279; T. Donaldson, 332–350; S. Sato, Hist. of the Land Question in the U. S., 428–439; T. V. Powderly, Thirty Years of Labor, chap. 8; Congressional Globe, *1861–62*, pp. 40, 132–139, 909–910.]

7. What was the national grange? What good did it accomplish? [E. W. Martin, Hist. of the Grange Movement; Adams, Granger Movement, in No. Amer. Rev., CXX, 394; F. J. Foster, The Grange in New England, in Annals, IV, 798–805; C. W. Priesen, Outcome of the Granger Movement, in Pop. Sci. Mo., XXXII, 201; W. P. D. Bliss, Encycl. of Soc. Ref., art. Grange..]

8. What were the grievances of the farmers that led to the so-called Granger movement? What remedy was sought? [Adams, in No. Amer. Rev., CXXX, 394; W. G. Moody, Land and Labor, chap. 3; Martin, Hist. of Grange Movement, part 6; A. T. Hadley, Railroad Transportation, 129–139; Adams, Railroads, 123–132.]

9. Why was there such wide-spread discontent among the farmers about 1890? [Rep. Ind. Com., VI, 36–143, 225–268; W. A. Peffer, Farmer's Side; C. F. Emerick, An Analysis of Agricultural Discontent, Pol. Sci. Quart., XI, XII; J. R. Elliott, Amer. Farms, books 2, 3;

E. Bemis, The Discontent of the Farmer, in Journ. Pol. Econ., I, 193–213.]

10. Sketch the history and demands of the Populist Party. [Peffer, Farmer's Side; Peffer, Mission of Pop. Party, in No. Amer. Rev., Dec., 1893; Walker, The Farmer's Movement, Annals, IV, 790; W. Gladden, The Embattled Farmers, in Forum, X. 315; F. L. McVey, The Populist Movement; W. D. P. Bliss, Encycl. of Soc. Ref., arts. Farmer's Alliance, Farmer's Movement, People's Party; Drew, The Present Farmer's Movement, in Pol. Sci Quart., VI, 282–310.]

11. How long would it have taken to harvest the crops of 1900 with the hand implements in use 75 years before? [H. W. Quaintance, The Influence of Farm Machinery on Production and Labor, in Publ. Am. Econ. Ass., 1904; 13th An. Rep. U. S. Bur. of Lab. Stat.; H. N. Casson, The New Amer. Farmer, in Rev. of Rev., XXXVII, 601.]

12. Was the change in the proportion of farms to the non-urban population from one farm to 14 persons in 1850 to one farm to 9 persons in 1900 (sec. 247) due to an increase of farms or to a decrease in the farming population? [Census (1900), vols. I, V.]

13. What effect, if any, did the introduction of farm machinery have upon the character of farm labor? [Quaintance, 69–92.]

14. Trace the history of the flour milling industry. [Pillsbury, American Flour, in C. M. Depew's One Hundred Years of American Commerce, I, 266–273; G. G. Tunell, in Jour. of Polit. Econ., V, 340–375; Wheat in Commerce: Bureau of Statistics, Summary of Commerce and Finance for March, 1888, p. 1400.]

15. Describe the growth of the pork-packing and dressed beef industries. [Armour, The Packing Industry, in Depew's One Hundred Years of American Commerce, II, 383-388; U. S. Agric. Reports, 1853, p. 50; 1863, p. 207; 1875, p. 96; 1876, p. 312; 1877, pp. 374–382; 1881, pp. 613–614; 1889, pp. 69–74; 1891, p. 318.]

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CHAPTER VIII

AGRICULTURE AS A BUSINESS

104. Position and growth of agriculture. — Down to 1880 agriculture was the principal source of wealth in the United States, but each succeeding census report has shown larger values of manufactured articles than of agricultural products. The proportion of the population engaged in agriculture has also steadily declined, until to-day it is less than one-third of the total. It must not, however, be inferred from these facts that agriculture is a declining industry. The farm area under cultivation has steadily increased while improved methods of cultivation and of transportation have so greatly augmented the yield that a large surplus of agricultural products over the needs of the people is annually set free for export. Agriculture still gives employment to a larger proportion of the population than any other branch of industry, and is progressing only less rapidly than the manufacturing and transportation industries.

The relative slowing up of agricultural expansion as compared with manufactures is due to the taking up of practically all the cultivable land in the United States. Further development in agriculture will take place in the improvement of existing farms rather than in the exploitation of additional new land. In this respect agriculture differs from manufacturing, where new processes and inventions are opening up ever-broadening fields of enterprise. This fact is illustrated by the slow growth in the number of farms during the last twenty years; in 1900 there were 5,737,372, by 1910 some 6,361,502, and in 1920 only 6,449,998; there was an actual decline in the number of farms in exactly half of the states

during the period 1910–1920. While the size of the average farm declined somewhat in the first decade of the twentieth century, it has increased again during the past ten years to 148.2 acres, due to the greater economy in operation of the larger farm with the aid of labor-saving machinery.

105. Farm tenancy. — The proportion of farms operated by tenants, which amounted to 35.3 per cent, in 1900, continued to increase until in 1910 they constituted 37.9 per cent. and 38.1 per cent. in 1920. During the World War there was a slackening in the rate of increase in tenant farming, due on the one hand to high prices obtained for farm products and the consequent profits accruing from operation by the owner, and on the other hand to the withdrawal of labor into industry and into the army. It is impossible to say whether the tendency to increasing tenancy has been definitely reversed or only temporarily checked. Tenancy is found in greatest degree in the rich agricultural districts where the price of land is highest and where consequently it is difficult for a young man to purchase land of his own. It is also found to have resulted in those sections where specialization in cereal production has proceeded furthest, that is where a standardized routine agriculture is practised; on the other hand, where diversified farming is carried on, ownership is more general. Owners tend to be more progressive while tenants follow the beaten track. Whether tenancy is to persist as a permanent phenomenon will probably depend upon the character of agriculture which the future may develop in the United States.

106. Farm machinery. — The distinctive feature of American agriculture during the last half century has been the growing use of farm machinery. The American farmer is known by his labor-saving machines and implements. Their wide use has been promoted by the peculiar conditions existing in this country, of cheap land and dear labor, which made it necessary to economize in the latter factor. The introduction of farm machinery has in turn changed the systems of crop

management and especially of crop rotation. Larger areas of cereal crops can now be grown because of the use of the self-binder as compared with the cradle and sickle; larger areas can also be handled in intertilled crops, and those that require much heavy labor in the harvesting. On the other

A Combined Harvester and Thresher in the State of Washington

An evolution from the sickle and the flail. On the dry Pacific slope the two processes are performed at the same time by the same piece of machinery, but in the middle States the sheaves are usually stacked until dry, when the threshing is done by steam threshers.

hand, the scarcity and high prices of farm labor have a tendency to reduce the area of crops that require much care.

Probably the most important machine which has been in-

troduced in recent years is the gasoline tractor. The importance of this machine lies not so much in its performance up to date as in the vast possibilities which it opens up for the future. The steam engine was first applied to the work of plowing and threshing, but within the past twenty years has been pretty generally supplanted by the gasoline engine. As first developed in the northwest the gasoline tractor was a large heavy-duty machine, but this was not very successful and was followed by the development of the caterpillar type of gasoline tractor, and finally by the light general-purpose tractor. The last named machine has already begun to displace horses to a noticeable extent. But the usefulness of the gasoline engine is not limited to the work of plowing, cultivating, threshing and drawing loads.

"It has been set to work turning the milk separator, the churn, the silage cutter, the washing machine, the sausage grinder and stuffer, the feed and fanning mills, and the grindstone. It pumps water for the stock, for the house water tank, and for irrigation; it saws wood, shells corn, digs post holes, and drills the well. It mows the lawn, and runs the milking machine, the vacuum cleaner, and the lathe in the work-shop. By its power the barn and orchard are sprayed with disinfectant, and the sheep are sheared. Granaries and silos may be built to any desired height and filled by means of elevators run by gasoline. Is there any limit to which this engine may not go in relieving the farmer, his wife, and their helpers from wearying muscular effort and drudgery?"[1]

107. Cereal production. — The production of cereals is the most important branch of agriculture in the United States, representing more than half the total value of the crops raised and requiring the use of nearly half of all the improved farm land. There are eight cereal crops which are grown in considerable quantities, and which are, in the order of their importance, corn, wheat, oats, barley, rye, buckwheat, rice, and

[1] A. H. Sanford, *The Story of Agriculture in the United States*, p. 259.

FORTY BINDERS AT WORK IN IOWA

On the large, level farms of the middle West the grain is usually cut by self-binding reapers. As the harvesting must be done as soon as possible after the wheat is ripe, and a reaper can harvest only about ten acres a day, each farm requires a number of these machines.

Kafir corn. In the following table will be found the statistics of the production of the first seven since 1900:

PRODUCTION OF CEREALS, 1900–1920

Kind	1900	1910	1920
Total production of corn, bushels	2,666,000,000	2,252,200,000	3,232,367,000
Total production of wheat, bushels	658,500,000	683,400,000	787,128,000
Total production of oats, bushels	943,000,000	1,007,100,000	1,526,055,000
Total production of barley, bushels	110,600,000	173,300,000	202,024,000
Total production of rye, bushels	25,500,000	29,500,000	69,318,000
Total production of buckwheat, bushels	11,000,000	14,800,000	13,789,000
Total production of rice, bushels	11,376,000	24,510,000	53,710,000
Total production of seven cereals, bushels	4,425,976,000	4,537,010,000	5,884,391,000

It will be noticed that while there have been fluctuations in the separate crops there has been no slackening in the increase of cereal production as a whole. Most of the gain has come from opening up new land in Minnesota, North and South Dakota, Nebraska, and Kansas, which contributed half of the increase in acreage during this period. Considerable additions have also been made by Texas and Oklahoma. With the practical exhaustion of unoccupied land suitable for grain raising it is evident that the future growth of cereal production will depend more upon improved methods of agriculture than upon the addition of new lands; in any case the rate of increase will probably be slower than it has been in the past.

Of the separate crops, corn is by far the most important, representing 75 per cent. of the total world production and 55 per cent. of all the cereals in the United States in 1920; the crop for that year was worth $2,181,000,000. Most of the corn (75 per cent.) is fed to stock throughout the corn-belt and comes to market in the form of beef and pork, dairy

CORN HUSKER AND SHREDDER

When dry the corn must be husked as soon as possible, that is, the covering must be stripped from the ear. The task is enormous, and numerous machines have been invented to do the work, but until recently they have not proved satisfactory, and most of the husking is still done by hand.

products, and poultry. In the production of wheat the United States also ranks first. Although worth about one half as much as the corn crop ($1,135,800,000), it attracts more general attention because of its importance as an export crop, many European nations depending upon the United States to supply their deficits. But wheat, like beef, is to a certain extent a frontier crop, since it stands transportation

well and can be grown profitably by extensive methods. The center of wheat production has moved steadily westward in the United States, and may soon pass beyond our national boundary to the new wheat lands in Canada. With the exception of oats, the value of which crop in 1920 was $720,000,000, the other cereals are of minor importance, though rice is steadily gaining in significance, owing to new methods of cultivation.

108. Cotton. — The production of cotton has steadily increased, from 4,717,000,000 pounds in 1900 to 5,325,000,000 in 1910, and to 6,849,987,500 in 1921. As an export product its importance is still more marked, making up as it does about one quarter of the total exports. Notwithstanding vigorous efforts on the part of foreign producers to make themselves economically independent of the United States in the production of cotton, this country produces over sixty per cent. of the cotton supply of the world. A needed improvement in the process of marketing cotton is now being made by the erection of more adequate warehouses for storing cotton; it is estimated that southern farmers now lose $50,000,000 a year in the deterioration of their cotton through exposure to the weather. There have been invented various labor-saving implements in the production of cotton, of which the most important are the cottonseed planter, the fertilizer distributor, the cotton-stalk cutter, and various kinds of plows and harrows. Vigorous efforts are also being made to perfect cotton-picking machinery. A definite limit is now placed upon the production of cotton by the necessity of picking it by hand; in other words, a man can cultivate more cotton than he can pick. If the pneumatic picking machine could be perfected so as to supplant hand labor in this operation it would effect a revolution in southern agriculture nearly as momentous as that which followed the introduction of the cotton-gin. The effect upon the labor now used in the cotton-fields would be no less striking.

The last quarter of a century has seen the most remarkable

growth in the cottonseed industry, and in the utilization of the stalks and roots, all of which had previously been regarded as waste products to be disposed of at considerable expense. Cottonseed oil, obtained from the seeds, is used in making salad oils, oleomargarine, lard, and soap, the meal is used as a fertilizer or fed to the stock, and the hulls and stalks are used for the same purpose or as fuel and in the manufacture of paper; in 1920 southern farmers realized $128,000,000 from the sale of cottonseed alone.

A peculiar feature of cotton production is that it is largely in the hands of tenant farmers, about two-thirds of the crop being produced by them; about half of the cotton farms are in the hands of Negroes. The farms in the hands of Negroes are generally small patches sufficient to raise a couple of bales of cotton or used for truck farming. The more recent tendency seems to be to combine small farms into a plantation and small plantations into larger plantations. Frequently these are under the control of corporations which conduct both mercantile and agricultural operations. In spite of the fact that the Negroes are in the most fertile sections, the average yield of cotton per acre for the negro owner is less than for the white owner, who is generally situated on the poorer soils. The Negro has shown the greatest efficiency in those sections where he has been brought most closely under the supervision of the whites. But the improvement of southern agriculture, diversification of crops, use of fertilizers and improved machinery are in general confined to the so-called white counties; the improvement in the means of transportation especially has stimulated this movement.

The high price of cotton during the past few years has been of great importance in lifting the cotton planter out of the slough of debt and dependence upon store credit. The crop lien has almost disappeared, deposits in the banks have increased, and the farmers have increased their purchases of farm machinery and fertilizer. A factor in the elimination of the crop lien and of store credit was the growth of small

banks with a minimum capital of $25,000, which were authorized under the national banking law in 1900; the cotton planter was financed by these banks instead of by the country storekeeper.

109. The cotton boll weevil. — Southern agriculture has been profoundly affected by the depredations of the boll weevil, and has undergone a veritable revolution in the past thirty years. The beetle migrated from Mexico into Texas in 1892, and since that time has spread over practically the entire cotton-growing area of the United States. The female weevil lays its eggs in the green bolls, on which the grubs later feed, so the bolls either fall off or fail to develop. The destructiveness of the boll weevil and the cost and difficulty of combating it have forced the southern farmer in the infested regions to give up or reduce the planting of cotton and to diversify his crops. This has been so beneficial that the effects of the boll weevil cannot be said to have been altogether bad; indeed, one county in Alabama has erected a monument to the boll weevil because it has compelled the abandonment of the one-crop system. In the ten leading cotton states the acreage planted in cotton decreased over 2,000,000 acres between 1919 and 1921, or from 38.9 per cent. of the whole to 36.1 per cent. At the same time the area planted in corn, oats, and hay increased about 4,500,000 acres. Production of food for home consumption has greatly increased in the South. The price of cotton throughout the world will undoubtedly be raised as a result of this shift in southern agriculture, but it is unlikely that the primacy of the South as the chief producer of cotton will be altered.

110. Live stock. — The raising of cattle for food purposes is the most important branch of the live-stock industry; the annual beef production of the United States to-day is about 7,000,000,000 pounds. The raising of live stock is the predominant industry in the semi-arid States of the West, as Montana, Wyoming, Colorado, and Texas. Of recent years there has been a movement of live stock from the ranges of

the far West to smaller farms (under 500 acres) in States immediately west of the Mississippi. Here they are raised in small herds, and more attention is given to breeding. With the development of stall feeding the concentrated foods, such as corn, have come to be of great importance and they are fed to the cattle where they are grown. It is not improbable, however, that the near future will see a development of the live stock industry in the East and South as a result of growing alfalfa and other special forage crops, of root crops, and of breeding varieties of corn, clover, and other crops especially adapted to those sections.

Scarcely second in importance is the production of pork and hog products, of which we contribute about one half of the world's supply. It is no mere coincidence that the twelve states of the north-central division, which grow almost three quarters of the corn, should also produce nearly two thirds of the hogs, for corn is the chief food used in fattening the animals for market. There is a strong concentration of this industry in Iowa, Illinois, Missouri, Indiana, and Nebraska. It is in these States that the great slaughter-houses and meat-packing establishments are found, notably in the cities of Chicago, Kansas City, and Omaha. Improvements in refrigeration and transportation have caused a great centralization of these industries in a few cities and permitted the growth of an immense export trade in meat products, amounting to about $175,000,000 in 1900 and $635,000,000 in 1920.

The dairy industry, which is quite distinct from the live-stock industry, is confined chiefly to the corn-belt and the eastern States. This industry has been greatly stimulated and transformed by recent developments. Chief among these should be named the rise of great markets in our large cities, for which it is necessary to furnish a regular and wholesome supply; trains carrying only milk are now run to all the principal cities, often from great distances, and methods of sterilizing, bottling and refrigerating milk have been developed. The breeding of cows for milk production has

yielded wonderful results, and the perfecting of the silo, whereby good feed is provided for the animals during the winter, has increased the winter supply of milk.

The poultry business has been almost revolutionized by the introduction of the incubator and brooder, which have greatly increased the production, and by the application of cold storage to both poultry and eggs, thereby equalizing their marketing and consumption throughout the year. New demands for eggs have also been created in certain manufacturing processes, such as photography, the manufacture of dyes, and the printing of calico.

111. The need of intensive farming. — In spite of the great increase in the products of agriculture the growth of the population proceeded so rapidly that by 1900 it had almost caught up with the capacity of the country, under existing methods, to produce the needed food supply. Thus, between 1900 and 1910, the population increased 21 per cent., but the cereal production only 1.7 per cent. Our agricultural exports declined, as we had less to spare for our neighbors in other parts of the world; the exports of wheat, corn, meat, dairy products, and other foodstuffs all fell off. On the other hand the increasing demand for agricultural produce could no longer be so easily supplied as formerly by merely extending the cultivated area westward. The practical exhaustion of the supply of arable land in our public domain closed that avenue of escape. The United States is now face to face with the problem that has confronted all European countries, of enlarging the food supply by increasing the production of lands already under cultivation.

The outbreak of the World War in 1914 abruptly changed the situation. Owing to the withdrawal in Europe of millions of men from productive industry to engage in war it became necessary for the belligerent countries to draw a larger part of their supplies from the United States. The increased demand raised prices and much marginal land, hitherto unimproved, was brought under cultivation and the output was

greatly enlarged. When normal activities were resumed after the armistice, the European peoples were able to supply most of their own needs and the inflated prices of American foodstuffs dropped sharply by the end of 1920. Production, however, has remained large, and this has forced to the front problems of farm organization and management, foremost among which is the question as to whether it is desirable to substitute intensive cultivation for extensive or exploitative farming.

The American always has been and for the most part still is a "cheap land" farmer, who has economized labor but has used land prodigally, always ready to desert old land for new. It is significant that there has been increasing resort to careful and exact farming with the cessation of free homesteading on the public domain on a large scale. The American farmer of the future will be compelled, as land increases in price, to resort to more intensive cultivation. Little, however, has as yet been done along these lines: thus if we compare the average crop yield for the period 1890–1911 with that for 1866–1889 we find that for the entire United States the yield of wheat was increased by $1\frac{1}{2}$ bushels per acre; but the average yield of corn was decreased by one-half bushel. During the next decade, 1911–1920, under the stimulus of war prices, the production of wheat was increased nearly one bushel per acre, and that of corn about $1\frac{1}{3}$ bushels per acre. That virgin soil rather than improved methods has been responsible for maintaining our wheat yield is made clear when we notice that nearly half of the wheat crop of the United States is produced in the five states of Kansas, Nebraska, Washington, and the Dakotas.

The necessity for more intensive cultivation has involved a change in agricultural practice and methods, and the transition is not easily made by those trained under easier conditions. Instead of the repeated cultivation of one staple crop, systems of cropping have been worked out; scientific rotation is used to prevent the exhaustion of the soil. Once it was

possible to point to the corn, wheat, rye, and cotton belts, where a massing of each crop took place regardless of local circumstances. But to-day these great aggregations of similar crops are being broken up, and local specialization is becoming the rule. The old practice of self-sustaining farming is also being promoted, especially in the West, as a result of the high freight rates, which make it less profitable for farmers to grow crops for distant markets or to bring in supplies from outside. As a result, they are diversifying their farming and raising more supplies for their own consumption. It is now necessary for a feeder to grow his own feed, and for the dairyman to rely less on shipped-in grain and forage. The nearness of a good market has become more important than the fertility of the soil in determining land values.

112. Irrigation and reclamation. — The exhaustion of the soil under the old single crop system and the great increase in the population have led to a demand for conservation, for reclamation, for agricultural education, and for other remedies to prevent a further rise in prices. The program of conservation involves a problem so much larger than the preservation of our agricultural resources merely, that a full discussion of this must be deferred to a separate chapter. It has been forced to the front by a recognition of the fact that a lessening of waste in the exploitation of our natural resources is necessary. Looked at from another point of view the problem presents itself as the better utilization of our resources, the intelligent development and not the destruction of our soil, our forests, and our fisheries. We shall confine ourselves here to the consideration of the first of these.

There remain of the public domain in the United States about 842,000,000 acres, practically all of which is in the arid zone. With the expansion of the population and the taking up of all the fertile public lands, the problem of reclaiming the arid plains of the western States has begun to attract attention. Nearly two fifths of the territory of the United States has an annual rainfall of less than twenty inches, and

is thereby reduced to a condition of sterility, except for grazing purposes, unless it can be artificially provided with the necessary moisture. Much of this land is exceedingly fertile, but cannot be cultivated except where it is brought under irrigation. This arid belt includes the eight States of Montana, Idaho, Wyoming, Colorado, Utah, Nevada, Arizona, and New Mexico, and parts of several other adjoining States.

IRRIGATION DITCHES

At the upper end of each ditch it is usual to construct some device by which the amount of water entering from the river can be regulated and its fair share distributed to each ditch. The effect of irrigation has been marvelous in reclaiming and developing the arid and semi-arid sections of the country.

Although irrigation had been practised in America from time immemorial by the Indians, only a few hundred acres were being irrigated when, in 1847, the Mormons began their experiments in Utah. By 1870 there may have been 20,000 acres under irrigation in the United States, but the next decade was one of rapid construction of small ditches by individuals and associations of farmers, and by 1880 the irrigated territory had grown to not less than 1,000,000 acres. "In the decade 1880 to 1890 occurred the 'boom' of speculative enterprise

in irrigation canals. Large sums of money were obtained for irrigation works by the sale of stocks and bonds, and great enterprises were projected. . . . Nearly all of these failed of financial success. . . . In 1889 there were 3,631,381 acres irrigated. . . . During the following decade the irrigated acreage doubled in extent. This has been due rather to the extension and enlargement of the many canals existing in 1889 and to the more complete practice of irrigation on the lands then under ditch than to the construction of new and large systems of irrigation."[1] In 1910 there were 13,738,485 acres under irrigation, from which were raised crops, chiefly hay and forage and vegetables, with a value of $181,617,496. By 1920 the acreage under irrigation had increased to 19,191,716 acres, which produced crops valued at $758,000,000. While most of the work done hitherto has been carried out by private initiative, a demand has recently arisen for irrigation at government expense, in response to which Congress in 1902 provided for the gradual building of irrigation works out of the proceeds of the sales of public lands. Regulation of the use of the limited water-supply, either by State or Federal authority, is essential to the success of irrigation.

Attention has recently been directed to the project of draining the vast swampy region that stretches along the Atlantic coast almost continuously from New Jersey to Florida. It is estimated that 80,000,000 acres could be drained and made available for cultivation; this would support a population of 10,000,000 people. These comprehensive irrigation and drainage schemes must be carried out by the government, and considerable has already been done along this line. The latest demand upon the Federal government has been for the establishment of a corps of trained men to visit the farmers of the country and instruct them in the principles of soil fertility, waste, and conservation. It is urged that such a service will reclaim a large part of the 900,000 square miles of depleted cultivable land in the East,

[1] Twelfth census, VI, 801.

and is of more importance than opening up small areas of new land to cultivation. This demand only emphasizes the need of increased education along agricultural lines, and to this we may turn. Here would seem to lie the ultimate solution of the problem of increased productivity.

113. Agricultural education. — An important step in the reorganization of American agriculture was the grant of Federal support to the agricultural experiment stations in 1887. There had been State stations before this, but now they were co-ordinated, their number increased, and their activities enlarged. By them science has been applied to agricultural problems, experiments carried on, and the results disseminated among the farmers. Their influence is already far-reaching, and will become increasingly important. It is estimated that the North Dakota station added to the wealth of that State ten million dollars a year for a decade by the better development of cereals. The Federal government is appropriating about one and one half millions of dollars a year for this work, and the States somewhat more. Most of these stations are situated at the agricultural colleges, which are to be found in every state and territory in the Union. The number of students in these institutions is steadily growing, and an increasing number of their graduates is going back to the farms equipped with a knowledge of scientific agriculture. This is taught as a science as well as an art, and the student is given a general education in farming methods. Agricultural education is also being carried down into the secondary schools; and with the passage in 1917 of the Smith-Hughes Act, granting Federal funds to high schools for instruction in agriculture, we may expect to see a great expansion along these lines. Lately, railroads, millers, grain dealers, and others interested in the development of agriculture have co-operated to bring the instruction of the schools and colleges as near to the farmer as possible by means of special lectures, with moving laboratories.

Another important kind of work along these lines has been

carried on by the Department of Agriculture. The bureau of plant industry has men searching for new plants in every quarter of the globe, and determining whether they are practical and desirable for introduction into the United States. During the single year 1904 nearly fifteen hundred new kinds of seeds and plants were introduced into this country, including species especially adapted to the arid regions. Other bureaus, which are performing equally valuable service, but which can only be mentioned, are those of forestry, weather, entomology, animal industry, chemistry, and the more recent bureaus of agricultural economics and markets. The results of the Department's work are brought to the farmers through the experiment stations, by its agents, and by various publications. As the application of the principles of experimental science to agriculture becomes more systematic and more general, no profession will require a more thorough scientific training than this.

An equally significant movement has taken place recently along the lines, not of governmental encouragement, but of self-help, and has led to agricultural coöperation. In manufacturing and commercial enterprises there has long been a tendency toward closer organization, but farming has been slow to avail itself of this principle. Now, however, agricultural coöperative organizations have been established for buying farm supplies, for marketing farm products, and for obtaining credit. The most noteworthy successes have been achieved in the selling of fruit, grain, milk, and some other commodities, of which the California Fruit Growers' Exchange may be cited as an example, and especially in the establishment of coöperative elevator companies, which are now to be found in the central and northwestern states. In 1919 coöperative marketing and purchases amounting to $721,983,639 were effected through farmers' organizations. By means of these organizations the farmers aim to maintain more stable prices by releasing their stocks gradually instead of flooding the markets immediately after harvest.

SUGGESTIVE TOPICS AND QUESTIONS. CHAPTER VIII

Although the old system of wasteful, extensive agriculture has by no means come to an end in the United States, a new era has come in this field. The growth of population has created a greater demand for food and other products, higher prices have caused a better utilization of the land, and stimulated a greater production. All this has meant better technique, more accurate knowledge, the substitution of science for rule of thumb. The problems of agriculture are problems of organization, of marketing and credit, and of education.

1. How long would it have taken to harvest the crops of 1910 with the hand implements in use 75 years before? [H. W. Quaintance, 19–28; H. N. Casson, in Rev. of Rev., XXXVII, 601; Thirteenth An. Rep. of U. S. Bur. of Lab.]

2. In his report for 1901 the Secretary of Agriculture wrote: "We import annually millions of dollars' worth of tropical products that could be grown in the United States." Should the tariff be extended so as to stimulate the growth of these products?

3. If the present increase in the consumption of bread continues, is there danger of a wheat famine in the future. [W. Crookes, The Wheat Problem, chap. 1.]

4. Why are exports of corn so small as compared with wheat?

5. Describe the ravages of the cotton boll weevil, and attempts to exterminate it. [Publ. Amer. Econ. Ass., 3d series, V, 114–117; Agric. Year-book, 1906, pp. 313–324.]

6. Why do not other countries raise their own cotton instead of importing it from the United States?

7. In 1905 some of the cotton planters agreed to burn part of their crop in order to keep the price up. Was this economically desirable?

8. Describe the production of beet sugar in the United States. Is it likely to increase? [The World's Sugar Production and Consumption 1800–1900, in Mo. Sum. of Com. and Fin., Nov., 1902; Taylor in Annals, XXII, 179; Baker in Rev. of Rev., XXIII, 324; Lighton in Cosmopol., XXXV, 181; Rutter in Quart. Journ. Econ., XVII, 44.; Taussig in Quart. Journ. Econ., Feb., 1912.]

9. Describe one of the bonanza farms of the West. [Powell in Arena, XXV, 373; Bindloss in Living Age, CCXXII, 498; Carver in World's Work, VII, 4332.]

10. What are the most important agricultural products raised near your home? Do you think more profitable ones could be introduced?

11. Is the live-stock industry carried on near cities? The dairy industry? Why? [S. Trotter, Geog. of Com., 114; C. C. Adams, Com. Geog., 77–79.]

12. Describe the methods of irrigation. [Twelfth Census (1900), VI, 391–880; E. Mead, Irrigation Institutions; F. S. Newell, Irrigation.]

13. Would it be possible to obtain a free grant of land to-day? How would you go about it?

14. Describe scientific forestry, and tell how far it has been introduced into the United States. [Reps. U. S. Dept. of Agric., especially 1860, 1865, 1870, 1875, 1886; Publ. U. S. Bur. of Forestry, Sen. Doc., 54th Cong., 1 sess., no. 84; H. C. Adams, Sci. of Fin., 242–247; B. E. Fernow, Econ. of Forestry.]

15. Describe the threatened extinction of the seal and the success of efforts to preserve them. Are any fish in American waters threatened with extinction, and why? [J. B. Henderson, Amer. Dipl. Questions, 10–15; Sprague in Overland, N. S., XLII, 435; Jordan in International, VII, 222.]

16. Are large or small farms better? [A. Marshall, Princ. of Econ., chap. 10, sects. 8, 9; chap. 11, sect. 7; A. Marshall, Econ. of Industry, 176–181; E. De Laveleye, Elements of Polit. Econ., 110; J. S. Nicholson, Princ. of Polit. Econ., I, 309; C. Gide, Polit. Econ., 154–157; J. S. Mill, Princ. of Polit. Econ., book I, chap. 9, sect. 4; H. Fawcett, Manual of Polit. Econ., 67–70; R. Mayo-Smith, Statistics and Econ., chap. 4.]

17. Are the people engaged in farming employed in more productive occupations than those engaged in transportation or domestic service? [C. J. Bullock, Intro. to the Study of Economics, 116; C. Gide, Principles of Polit. Econ. (2d ed.), 75–80.]

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CHAPTER IX

CONCLUSIONS

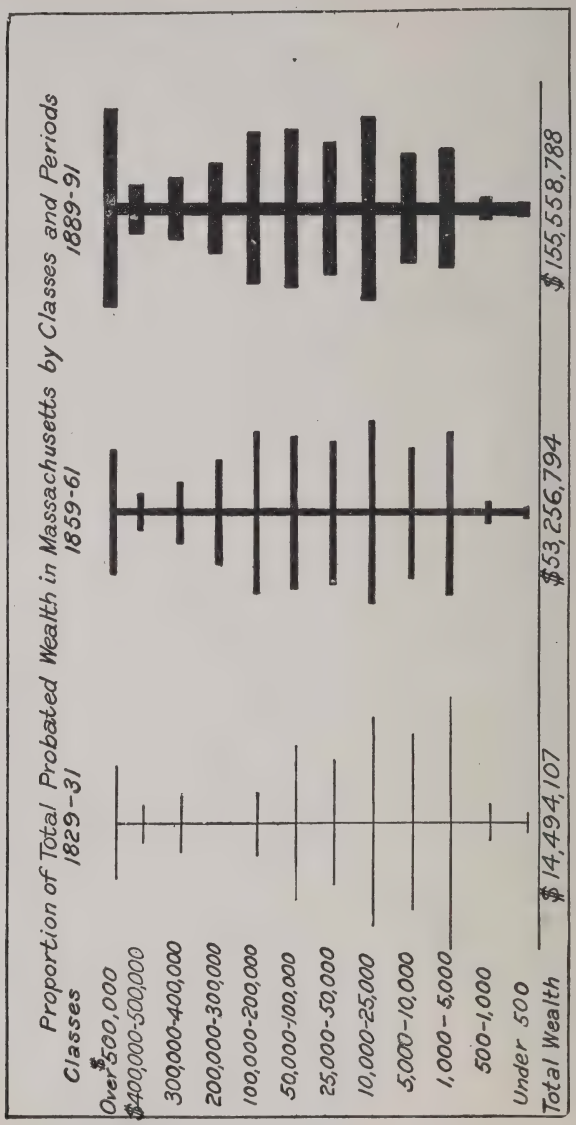
114. The concentration of wealth. — The record of the economic development of the American people has been one of steady growth in national strength and material wealth. Before concluding this survey, however, it will be desirable to ascertain if possible to whom this vast increase of wealth is going. The situation at the beginning of the twentieth century may be stated somewhat as follows: We have large natural resources of every sort needed in modern production; a working population of some 25,000,000 persons, many highly trained; a supply of active capital of not less than $50,000,000,000; a highly efficient organization of industry, transportation, and finance, which permits the most economical production and exchange of commodities; and finally, political and social conditions which are distinctly favorable to the production and acquisition of wealth. It is certainly pertinent to inquire, not merely what this combination of resources, labor, capital, and skill is effecting in the way of production, but also how the vast output is being distributed. Equality of conditions and the wide diffusion of wealth have long been the boast of our Republic; are they less true to-day than they were fifty or one hundred years ago? In the half century, 1850–1910, the per capita value of all property in the country has more than quadrupled; how has this been distributed? While no absolutely exact statistics exist on this subject, yet reliable estimates by scientific students all tell the same story — of concentration of wealth in the hands of the richest groups. The character of the changes which have taken place in the last seventy-five years of the nineteenth century is perhaps best shown in a study of probated

estates in Massachusetts, made by the State Bureau of Statistics of Labor.

This gave the amount of wealth that was probated at different periods, classified according to the size of the estates that were left. If we represent the percentages of the total wealth probated at each period by graphs, in which the length of the lines represents the percentage in each class, and the thickness of the lines represents the relation of the totals from one period to another, we shall obtain a clearer idea of the changes that have taken place than we could get from a mere table of figures. It will be seen that in the period 1829–31 the branches of the tree-like figure are broadest near the base, while the reverse is true for the period 1889–91. That is, a larger proportion of the probated wealth was in small estates of not over $5000 in 1830 than in 1890, while in the latter period the largest single group was that of estates of $500,000 and over. This would seem to indicate an increasing concentration of wealth in the hands of the richest men. But another significant feature of the graphs is the fact that the top branches tend to grow longer at the expense of the lower branches, showing a tendency for all the estates to become larger as time goes on. In 1829 the amount of the average estate was $4,000; sixty years later it was over $10,000. The increasing wealth of the community is also shown by the thickening of the lines.

These figures seem to show not merely that a large proportion of the total wealth is in the hands of the rich, but that this proportion has greatly increased. In 1893 Mr. George K. Holmes estimated from a study of the statistics of farm and home ownership in the United States in 1890 that "91 per cent. of the families of the country own no more than about 29 per cent. of the wealth, and 9 per cent. of the families own about 71 per cent. of the wealth." A later and more careful study has reached more conservative conclusions.[1] Income

[1] *Income in the United States: Its Amount and Distribution*, 1909–1919. By W. C. Mitchell, W. I. King, F. R. Macauley, O. W. Knauth (New York, 1921).


Proportion of Total Probated Wealth in Massachusetts by Classes and Periods
1829-31
1859-61
1889-91
Classes
Over $500,000
$400,000-500,000
300,000-400,000
200,000-300,000
100,000-200,000
50,000-100,000
25,000-50,000
10,000-25,000
5,000-10,000
1,000-5,000
500-1,000
Under 500
Total Wealth
$14,494,107
$53,256,794
$155,558,788

rather than wealth was made the subject of this investigation, and the conclusion was reached that 86 per cent. of the gainfully employed in 1918 received about 60 per cent. of the national income, while 14 per cent of those employed received the remaining 40 per cent. of the income. The total national income for this year was estimated at $61,000,000,000, which would yield a per capita income of $586. Both of these figures are unduly high as they are figured in terms of an inflated currency, but even when reduced to a pre-war level both figures are higher than those of any other country.

115. Economic loss through inequitable distribution. — It is evident that we have moved a long distance from the democratic conditions of comparative economic equality that existed seventy-five or one hundred years ago. "Swollen fortunes" are a phenomenon of the twentieth century. But, it may be asked, wherein lies the evil of inequality, since society as a whole has undoubtedly gained in wealth? Indeed, some writers argue that this very inequality is a necessary stimulus to economic production. Without attempting to argue the point, certain economic losses that result from grossly inequitable distribution of wealth may be pointed out. The great fortunes of the United States have been made possible by the unrivaled opportunities for the exploitation of natural resources, the appropriation of natural monopolies, and the development of new lines of trade and manufactures. Many of the natural resources have been monopolized by a few, who have become wealthy with the growth of population and the consequent increase in demand. Situated at strategic points in the industrial world, they have exacted tribute of society, much as the robber barons of old. And in this they have been greatly helped by receiving discriminating favors from railroads and other natural monopolies, through which their position has been greatly strengthened against possible competitors. Under such circumstances the growth of their wealth has not measured either the efficient utilization of the resources of the continent, or the greatest social gain

from their use. Increased production has not infrequently been attended by increased inequality in distribution. On the other hand, it must be emphasized that the wonderful opportunities, which the United States has in general opened to ability and talent, have spurred the virile and capable to the fullest development of their native powers. These persons have in most instances earned their large rewards and have conferred upon society even greater benefits.

Inequitable distribution generally means poor economy and low efficiency in the work of production. While on the one hand there has developed in this country a splendid type of business organizer, called forth by the very conditions of industry, on the other are to be noted the wastes of overwork, child labor, sweating, industrial disease, preventable accidents, slums, etc. A better organization of industry and distribution of wealth would prevent many of these and would raise the general standard of efficiency. Gross inequality also means lessened pleasure in the consumption of wealth. What is needed is not merely more wealth, but wealth so distributed that the economic gratifications of society would be maximized. The sum total of economic satisfactions will be greater in a society in which there is fair equality of distribution than in one where the millionaire is jostled by the tramp. There is finally an inconsistency, not to say a danger, in a society which is politically democratic, but economically plutocratic.

116. Needed reforms. — It is easier to criticise than to suggest remedies, but certain conclusions seem irresistible. So far as the problem can be solved by means of legislation, this should be used to prevent monopoly. Not only this, but society should also assert its right to all unearned values by ownership, by special taxation, or other methods. Special privilege must be prohibited and so far as possible the door of opportunity kept open for all alike. Limited natural resources must be saved to society, and this should be done by the means that seem most feasible under the particular circumstances, whether this be government ownership, regulation,

fixation of rates, or assistance. More important than legislation, however, in the ultimate solution of this as of most problems, is education. By means of better education increased individual efficiency must be secured and economy in national production augmented. Increased production is necessary as a condition to better distribution. Education in consumption, in the art of spending, is hardly less necessary, both to prevent waste and to achieve greater economic satisfactions from existing wealth. This may be secured by greater wisdom in the expenditure of his income by each individual, by the greater socialization of wealth, as in the form of libraries, art galleries, parks, etc., and by the shortening of the working day, whereby leisure, one of the greatest boons of civilization, will be more generally distributed. We may trust to education to teach the best use of this leisure.

Among all the reforms suggested the one which would probably yield the largest immediate improvement in economic conditions is the more rational expenditure of income. If the positively harmful and also the relatively frivolous expenditures were eliminated from our budgets, there could be produced and consumed more things which would contribute to economic efficiency and would raise the standard of living. A current estimate places the expenditures in the United States in 1921 for luxuries at $22,700,000,000. To be sure the word " luxuries " is made to include a good many articles of consumption, such as cake and candy, ice cream, face powder, furs, and similar things, which contain some real utility and would have to be replaced by other consumable articles, if discarded. But even allowing for exaggeration it undoubtedly remains true that great economies could be effected by wiser expenditures.

117. Summary: The colonial period. — The new world seems to have been reserved in all its wonderful richness of undeveloped resources for settlement by the Anglo-Saxon race. The aborigines who were found in the country at the first coming of the white man had not advanced far enough in

civilization to exploit the mineral or agricultural wealth, but subsisted largely by the chase or by a primitive agriculture which barely scratched the surface of the soil. Although other nations were first on the scene they finally yielded the title of the continent of North America to the English. The motives which sent the early colonists to these shores were effective in selecting the most venturesome, energetic, and liberty-loving for the work of settlement. During the colonial period the work of the colonists was a constant struggle with nature, the hewing of homes out of the forest, and the development of the wilderness. The industries of the colonists were determined largely by their environment and were scarcely a matter of choice; agriculture was of necessity the most important single industry, supplemented in New England and the middle colonies by fishing and commerce. While manufactures were early attempted, they were never developed far. Partly responsible for this was the restrictive commercial policy of England towards the colonies, which made their interests subordinate to those of the mother country.

Although the work of the colonists involved unremitting toil and hard conditions, they were never carried away by materialism. From the beginning the American people have had ideals and have sought earnestly to realize them. They have not been swept on blindly by the forces of nature, but have deliberately sought to realize certain political, social, and economic ideals. In the simple conditions of an undeveloped agricultural community their realization seemed comparatively easy. While the accumulation of wealth was as yet slight, it was distributed fairly equally, and poverty was almost unknown. There was abundant opportunity for all who would exert themselves, and to labor itself there attached no social stigma. Widespread economic well-being characterized the end of the period.

118. Summary: The struggle for freedom. — The colonial period was brought to a close by the revolt of the colonies against the restrictive and irritating economic policy of Eng-

land. Political independence, however, was not followed immediately by either commercial or economic independence. Another war was necessary before the first was secured, while the second can hardly be said to have been attained until the second quarter of the nineteenth century. The economic development of the country after the Revolution followed in the main the same course which had characterized it before. During this period the carrying-trade was developed to an extraordinary degree, while the foreign demand for our agricultural staples also gave a great stimulus to agriculture. A beginning was made in manufactures, but these industries were confined as yet to the household. As during the colonial period, so also during the thirty years following the Declaration of Independence, the economic policy of the new States and later of the Union was largely dependent upon that of England and of Europe. The face of the American people was turned to the Atlantic and their gaze was directed across it. From this colonial attitude they were first rudely shaken by the embargo and later by the War of 1812, which mark an important industrial transition in the economic life of the nation.

119. Summary: The westward movement. — The restrictive period inaugurated by the embargo, during which foreign intercourse was almost completely cut off, introduced an industrial revolution which gradually transferred the textile and other manufacturing industries from the household to the factory. By the time of the Civil War the transition had been almost completely accomplished. More significant, however, and more important in the life of the growing nation, was the westward movement of the population. The great task of the American people, of appropriating and settling the vast territory to the west of the Alleghanies, was now undertaken on a large scale. Hand in hand with the westward movement, as a part of it, went the exploitation of the undeveloped resources of the country, the expansion and improvement of agriculture, and above all, the development of improved means of transportation and communication.

This period marks the emergence of a strong national feeling. For the first time the American people turned their back on the Atlantic and developed a commercial policy which looked to economic as well as political independence of Europe. The Monroe Doctrine was simply the political statement of the economic situation and policy, though the territorial phase was primarily emphasized in the debates on this subject. The problems of this period were internal and domestic: the disposition of the public lands, the encouragement of internal improvements, the protection of manufactures, the building up of the merchant marine, and above all, the question of slavery. The material prosperity of the country and the growing economic integration of the different sections were threatened by the existence of this institution. The dictum of Lincoln, that "this country cannot endure half slave and half free," was as true economically as it was politically. The unwillingness of the people to permit the further extension of slavery led finally to the Civil War and to the abolition of the institution.

As a whole the period was one of marvelous material expansion and prosperity. The prodigality of nature, the bigness of the country, and the character of their work led to the exhibition of some of the less desirable traits of the American people. But, while their manners were often rude, the heart and conscience of the nation were right. Economic well-being was widespread and poverty was rare outside of the larger cities, but already complaints were heard of labor troubles, of the increasing power of monopolies and corporations, and of the growing concentration of wealth.

120. Summary: The rise of industrialism. — The end of the Civil War found the different sections of the country in different stages of economic development and confronted with varying problems. The South was left with a peculiar problem of its own. A new generation of free laborers had to be trained up to take the place of the former slaves, as these died off. That, and the exploitation of the untouched natural

wealth of this section, is the task of the South, upon whose solution she is now entering with the vigor of a young people. In the West the free land had been practically all taken up, and the future will probably see there the application of a more intensive agriculture and the slow, steady, non-dramatic extension of other interests — the growth of the population, of cities, and of manufacturing industries.

The industrial development of the central and eastern States is already far advanced, and with this growing industrialism have emerged numerous problems. The transference of manufactures from the household to the factory has been completely effected, and the factory has grown in size and complexity. Large-scale production characterizes the manufactures, transportation, and distribution of most of the products of the country. With the expansion of industry beyond the limits of a local market, its organization on a larger scale became imperative. The formation of corporations and trusts has been one answer to this demand; the trust is a temporary form, but the organization of capital in larger masses is a permanent result of this movement. Association and coöperation are types of an advanced stage of economic development, and it is highly desirable that the benefits of these should be secured, while avoiding the evils of monopoly. Hand in hand with the organization of capital has gone that of labor. The organization of industry on a large scale, with expensive machinery has resulted in the growth of a wage-earning class; these workers have organized on a national scale and enforced their demands with fairly steady success. The changed character of immigration has complicated the labor situation and has brought the question of its further restriction to the front.

Having settled the most pressing domestic problems resulting from the Civil War, the country has now directed its attention to the invasion of European markets. The industrial development of the country has been such as to permit not merely the satisfaction of domestic needs, but also the expor-

tation of surplus manufactured goods. Again the American people may be said to have faced the Atlantic and directed their gaze towards Europe; the near future will undoubtedly see a change in their commercial policy corresponding to this altered economic attitude.

121. Summary: Economic integration.—The abolition of slavery permitted harmonious economic coöperation between the different sections of the country; and the last quarter century has seen rapid progress toward the complete industrial integration of the whole country. As interests have become larger, sectional divergencies have been lost in the growing unity of the greater whole. With the growth of the transportation system and the expansion of the population, industries have outgrown the narrow limits of local communities and even States or sections, and have become national in scope and importance. The problems have therefore been shifted largely from the local to the national arena, and the agencies of control have necessarily become those of the Federal government, a movement which has been hastened by the expansion of Federal powers during the World War. Never before was the question of governmental regulation of private industries more important. True economic freedom, the equal opportunity of all in the race for wealth, can be obtained only by the enforcement of law and conservative control. While an unrestrained policy of *laissez faire* has permitted the growth of some undesirable features in the political, social, and economic organism, there are many and hopeful indications at present not merely of the recognition of the need of public regulation, but of its actual application. There is also a growing sense of responsibility on the part of the average citizen and man of wealth. The great problem of the present in the United States is no longer that of appropriating the natural resources, but of the wise use and administration of the great wealth of the country by those in whose ownership it rests.

There has been an enormous increase of wealth during this period, but there has been also a disproportionate concentra-

tion of wealth in the hands of a few. Old world problems of poverty — from which we had hoped we were happily free — have emerged in our cities, where destitution and vice have been localized and brought before the public gaze. On the whole, however, the present probably sees as wide and general a diffusion of plenty as any previous time in our national history. The future holds great promise and also grave responsibility for the wise and conservative solution of these far-reaching economic problems.

SUGGESTIVE TOPICS AND QUESTIONS. CHAPTER IX

1. Is the concentration of wealth a desirable thing? [C. B. Spahr, Distribution of Wealth in the U. S.; G. K. Holmes, Concentration of Wealth, in Pol. Sci. Quart., 1893; W. E. Weyl, The New Democracy, 139–155.]

2. Enumerate the economic causes of large fortunes. [G. P. Watkins, Growth of Large Fortunes; A. Youngman, Economic Causes of Great Fortunes.]

3. Are the rich growing richer, and the poor, poorer? [C. D. Wright, Pract. Soc., 343–9; *Ibid.* in Atl. Mo., LXXX, 300; The Concentration of Wealth (symposium), in Independent, May 1, 1902; A. J. Ferris, Pauperizing the Rich.]

4. In a speech in April, 1906, President Roosevelt said: "As a matter of personal conviction, and without pretending to discuss the details or formulate the system, I feel that we shall ultimately have to consider the adoption of some such scheme as that of a progressive tax on all fortunes, beyond a certain amount, either given in life or devised or bequeathed upon death to any individual — a tax so framed as to put it out of the power of the owner of one of these enormous fortunes to hand on more than a certain amount to any one individual." Discuss this.

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mission, of the Treasury Department, and of other bodies. Important reports of national commissions on various problems are frequently published. All of these Government documents can be purchased at a nominal charge from the Superintendent of Documents, or may sometimes be obtained free from the Congressmen of the district.

INDEX

Africa, 40, 65
Agricultural credit, 124
  development, 99
  education, 148
  exports, 46
  implements, 42
  machinery, 117
  population, 114
  products, 46, 82
  progress, 47
Agriculture, 17–33
  American, 47
  and land tenure, 17–33
  application of chemistry to, 45
  application of machinery to, 111
  as a business, 132
  British, 20
  character of, 91
  European, 47
  expansion in, 81
  Indian, 20
  in the North, 42
  in the South, 42
  of Europe, 19
  position and growth of, 132
  progress and prosperity of, 85
  societies for the promotion of, 43
Alabama, 6, 40, 63, 97, 141
Alleghanies, 48, 53, 66, 86, 159
Allspice, 23
Aluminum, 7
Animal industry, 149
  life, 8
Anti-abolition spirit, 65
Anti-slavery movement, 65
Appalachians, 6, 11, 54
Apples, 19, 26, 90
Arid belt reclaimed, 146
Arizona, 7, 146
Arkansas, 64
Asia, 22
Atlantic coast, 8, 12
Austria-Hungary, 122
Ayrshires, 89

Bacon, 66
Baltimore, 86
Barley, 19, 26, 27, 135
Beans, 19, 20
Beef, 46, 138
Belgium, 122
Berries, 26
Borax, 8
Boston, 41
British agriculture, 20
  Corn Laws, 84
Brooder, 143
Buckwheat, 26, 27, 135
Buffalo, 91
Butter and cheese, 28, 46, 89

Cabbages, 19
California, 7, 77
Canada, 139
Carolinas, 11, 27, 28, 40
Carrots, 27
Cart, 19
Cattle, 18, 21, 59, 80, 86, 100, 125
  and sheep, 27
  milk-breed and beef-breed, 45
  raising, 28

Cements, 8
Cereals, 134
  chief exports of, 121
  production of, 82, 115, 135, 137
Character of the people, 2
Charleston, 41, 43
Cheese factory, 89
Chemistry, 149
  application of to agriculture, 80
Cherries, 26
Chicago, 84, 88, 89, 126, 127, 142
Chile, 24
Cincinnati, 60, 88, 89
Cinnamon, 23
Civil War, 14, 65, 87, 89, 111, 114, 121, 126, 159, 160, 161
  effect on agricultural development, 111
Clays, 8
Clermont, 59
Climate and economic development, 12
  of New England, 28
Clothing, 18, 66
Clovers, 19
Coal, 3, 5, 13, 73, 107
Coast line, 3
Coastal Plain Region, 11
Cod, 8
Coffee, 18
Colonial methods of farming, 20
  occupations, 17
  period, 157
Colorado, 6, 141, 146
Columbus, Christopher, 24
Commerce, 17
Communication, 58, 159
Conditions of economic development, 1
Conestoga Wagon, 58
Congress, 41, 65, 71, 75, 147
Connecticut, 27, 36, 41, 43, 56
Confederation, the, 70
Copenhagen, 11
Copper, 7, 13
Cordilleran Region, 5, 6, 12
Corn, 11, 13, 20, 27, 77, 80, 85, 90, 135, 138, 142, 144, 145
Corn, husker and shredder, 138
  planters, 79
Cotton, 11, 13, 22, 27, 46, 66, 77, 85, 95, 100
  and slavery, 35
  boll weevil, 141
  culture, effect of slavery on, 102
  culture, extension of, 40
  culture, introduction of, 35
  culture, spread of, 62
  gin, 36, 97
  growing, 86
  machinery, 35
  price of, 40, 50
  production of, 37, 139
  sea-island, 35
  seed industry, 140
Cows, 28
Cradles, 74, 77
Credit, sales on, 48
Cultivators, 79
Cumberland Gap, 54

Dairy industry, 89, 142
  products, 13, 126, 138
Dakotas, 113, 144
Declaration of Independence, 159
Deer, 8
Delaware, 31
Department of Agriculture, 149
Devons, 87
Draft horse, 88
Ducks, 8
Durhams, 87
Dutch, 31, 45

Early land policy, 48
East, the, 59, 107, 142, 147
  effect of cotton culture on, 66
  manufacturing cities of, 73
Economic development, 12
  integration, 162
  integration and industrial organization, 111
  loss through equitable distribution, 155
  revolution, 54

Education, 148, 157
Eighteenth century, 20, 43
Electrical appliances 3
Electric power, 5
Elevators, 121
Embargo, 55
England, 24, 35, 48, 54, 63, 159
English colonial system, 35
English corn laws, 85
Era of small farms, 123
Erie Canal, 12, 62, 82
Europe, 2, 3, 11, 19, 22, 24, 30, 111
European markets, 161
Experimentation and adaptation, 22
Export trade, 85
Exports of grain, 84

Fanning mill, 19, 45
Farm area, extension of, 75
implements, 28, 77, 43
machinery, 78, 80, 133
tenancy, 133
Farmer, a speculator, 91
condition of, 90
Farming, changes in, 83
colonial method, 99
industry, 77
intensive, 143
Farms, number of, 114
ownership of, 115
Fertilizers, 80
Figs, 22
Fishing, 17
Flail, 19
Flax, 18, 27, 100
Florida, 7, 147
Flour, 46, 66, 122
Forestry, 149
Fork, wooden, 29
Fox, 8
France, 120
Freedom, struggle for, 158
French and Indian War, 54
Fur-bearing animals, 8

Game laws, 8
Gasoline tractor, 135
Geese, 8
Germany, 120
Georgia, 11, 27, 35, 36, 38, 40, 63, 105
Gold and silver, 7
Governors, early English in New York, 31
Grain-cradle, 45
Grain states, 112
Grain trade, 84
Grants of land, 75
Grapes, 26
Great Britain, 11, 19, 122
Great Lakes, 3, 8, 62, 75
Great Plains, 12
Grubbers, 79
Gulf states, 65
Gums, 9
Gypsum, 8

Hams, 46, 66
Hand-rake, 77
Harrow, 19, 29, 43
Harvester and thresher, 134
Hay, 29, 46, 116
Hemp, 18, 22, 27
Herefords, 45, 87
Herring, 8
Hickories, 9
Hoe, 19, 44
Hogs, 18, 28, 59, 88, 142
Home consumption of products, 85
Homestead Act, 113
Horses, 28, 45, 46, 59, 66, 86, 89, 119, 120
Horse-rake, 71
Hudson, the, 31, 59
Hussey, Obed, 78

Idaho, 146
Illinois, 46, 57, 75, 112, 126, 128, 142
Incubator, 143
Indian, 8, 18, 30, 53, 146
agriculture, 20
corn, 23, 42, 46, 82, 122
Indiana, 46, 57, 75, 142

Indigo, 18, 22, 23, 26, 27, 32
Industrialism, rise of, 160
Intensive farming, need of, 143
Internal trade, extent of, 62
International grain trade, 121
Iowa, 57, 112, 117, 126, 142
Ireland, 24
Iron, 6, 13, 90, 107
  implements, 18
Irrigation, 12
  and reclamation, 145
  canals, 147
Italy, 122

James River Colony, 21
Jamestown Colony, 28
Jefferson, Thomas, 44
Jersey cattle, 89

Kafir corn, 137
Kansas, 8, 126, 137, 144
Kansas City, 142
Kentucky, 11, 45, 46, 50, 54, 86, 87, 88, 95
King Cotton, 99

Lake Erie, 62, 75, 91
Lake herring, 8
Lake Michigan, 84
Lake Ontario, 62
Land, disposal of for settlement, 70
  grants of, 75
  holding in New England, 31
  tenures, 30
  western, 73
Lard, 46, 66
Lead, 13
  and zinc, 7
Leather, 18
Legislation, 156
Lentils, 22
Lincoln, 160
Live stock, 24, 27, 45, 46, 66, 86, 89, 117, 125, 141
Long-horns, 87
Louisiana, 40, 61, 64
  Purchase of, 54
Louisiana, Territory, 108
Louisville, 62
Lucerne, 22, 47
Lumber, 13, 18

Machinery, agricultural, 117
  application of to agriculture, 111
  other improvements in, 79
Mackerel, 8
Madder, 22, 47
Maine, 64, 91
Maize, 23
Manning, William, 78
Manorial system, 31
Manufactures, 17
Market gardening, 83
Maryland, 27, 38, 48, 54, 95
Mason and Dixon's line, 65
Massachusetts, 41, 43, 44, 153, 154
  Bay Colony, 29
McCormick, Cyrus H., 78
  Reaper, 83
Meat-packing, 88, 126
Meats, 13
Melons, 90
Merinos, 46, 87
Metals, 7
Methods of farming, colonial, 20
Mexico, 7, 99, 141
Michigan, 7, 8, 57, 75
Middle Atlantic States, 83
Middle prairie and lake region, 11
Middle states, 47
Migration, early westward, 54
Millet, 22
Mineral fertilizers, 7
Mink, 8
Minnesota, 113, 137
Mississippi (state), 9, 97, 123
  (river), 5, 11, 40, 54, 59, 65, 82, 142
Missouri (state), 64, 112, 126, 142
  (river), 3, 12
  Compromise, 64
Monroe Doctrine, 160
Montana, 7, 141, 146

Mormons, 146
Mountain sheep, 8
Mowing machines, 78
Mules, 45, 66, 86, 89, 119, 120

Napoleonic wars, 47, 55
Naturalization, 22
Nebraska, 126, 137, 142, 144
Nevada, 7, 146
New England, 17, 19, 22, 27, 28, 31, 33, 41, 46, 47, 83, 85, 91, 116
Newfoundland, 6
Newfoundland Banks, 19
New Jersey, 28, 147
New Mexico, 146
New Orleans, 59, 61, 62, 85
New World, 29
New York, 8, 11, 17, 32, 43, 45, 57, 126
New York City, 73
Nineteenth century, 22, 70
North, the, 32, 38, 42, 63, 65, 95, 106, 111
North America, 8, 20
North Carolina, 38, 54, 63
North Dakota, 137, 148
North Pacific Coast, 8
Northwest, the, 12, 102, 106, 112

Oaks, 9
Oats, 19, 26, 27, 80, 135
Ohio (state), 8, 11, 46, 48, 50, 56, 57, 75, 84, 86, 87, 88
(river), 12, 54, 59, 62
Valley, 46
Oklahoma, 137
Olives, 23
Omaha, 142
Onions, 19, 27
Oranges, 23
Ordinance of 1787, 64
Oxen, 28, 45
Oysters, 8

Pacific coast, 9
Slope Region, 12
Panic of 1837, 73
Papal bull, 29
Paris exhibition, 78
Parsnips, 27
Peace of Amiens, 54
Peaches, 90
Pears, 26, 90
Peas, 19, 27
Penn, William, 30
Pennsylvania, 11, 33, 45, 54, 73
Peru, 24
Petroleum, 13
Philadelphia, 43
Phosphates, 7, 13
Pigeons, 8
Pilgrims, 31
Pioneer farming, 17
Pittsburgh, 3, 59
Plantations, management, character of, 104
of the South, 32
system, 97
system in the South, failure of, 122
Plow, 19, 29, 44, 76
Plowing, 43
Plows, cast-iron, 44
Plums, 26
Poppies, 47
Population, 75, 77
and slavery, 106
expansion of, 145
movement of, 54
westward movement of, 159
Pork, 28, 46, 138
packing, 89
products, 142
Portugal, 30
Potato, 23, 24, 80, 90
Poultry, 138
business, 143
Prairie chickens, 8
Pre-emption, 74, 75
Private industries, governmental regulation of, 162
Public debt, 48
Public domain, 48
Public lands, importance of, 70
and agriculture, 70

Public lands, and early land policy, 48
pre-emption of, 73
Pumpkins, 20, 23, 24, 27

Quail, 8

Railroad, 56, 80
system, extension of, 112
Railways, 11
Rainfall, 12, 145
Reaper, 78, 111
Red River, 40
Regional specialization, 116
Revolution, the, 21, 26, 31, 33, 35, 42, 44, 48, 53, 54, 159
Rhode Island, 41
Rice, 11, 18, 22, 23, 26, 27, 32, 46, 85, 100, 135
Rise of industrialism: summary, 160
Rocky Mountain region, 7, 9
Rome, 11
Rotation of crops, 21
Russia, 122
Rye, 19, 26, 27, 135, 145

Sable, 8
Sainfoin, 22
Sales on credit, 48
Salmon, 8
Salt, 8, 18, 90
Science of agriculture, development of, 45
Scythes, 44
Sectional divergence, 107
Seed-drills, 79
Seventeenth century, 19
Shad, 8
Sheep, 27, 28, 89
Ship-building, 17
Shovels, 44
Sickle, 19
Silk culture, 22
Silver, 7
Sixteenth century, 24
Slate, 8
Slave labor, 35, 42
advantages of, 100
Slave labor, defects of, 101
economic cost of, 103
economic disadvantages of, 38
-ships, 41
states, 77
-trade, growth of, 40
restriction of, 42
Slavery, 64
and the population, 106
and the South, 95
as a system of labor, 95
decline of, 37
effect of cotton culture on, 39
growth of, 95
moral effects of, 105
nature of, 97
Slaves, importation of, 96
importation of forbidden, 38
importation of prohibited by Congress, 41
Societies for the Promotion of Agriculture, 43
Soil, 9, 18, 21, 22, 26, 47, 59, 144, 147
"Soo" Canal, 12
South, the, 11, 27, 35, 38, 86, 100, 116, 141, 142, 160
agriculture in, 42
development of, 95
effect of cotton culture on, 63
failure of plantation system in, 122
plantations of, 32
progress of prevented, 106
South Carolina, 7, 26, 35, 36, 38, 63, 105
Southern colonies, inheritance in, 32
South Dakota, 137
Southern pine, 9
Southwest, the, 27, 58, 64
Spade, 19, 29
Spanish sheep, 46
Spain, 24, 30
Spelt, 22, 47
Spurry, 47

Squash, 24, 90
Squirrel, 8
Steamboat, 61
  introduction of, on western waters, 59
  invention of, 58
Steam engine, 3, 135
Steam traction engines, 118
Stock raising, 86
Straw, 29
Strawberry, 24
Struggle for freedom, 158
Sturgeon, 8
Sugar, 11, 18, 63, 77, 85, 100
Sugar cane, 32
Sulphur, 13
Superior, Lake, 6
Sulphur and borax, 8
Supreme Court, 61
Swine, 28, 85, 100
Switzerland, 122
System of agricultural credit, 124

Tallow, 46
Tea, 18
Temperature, 12
Tennessee (state), 7, 11, 40, 46, 50, 54, 88
  (river), 54
Territory of the United States, additions to, 49
Texas, 40, 65, 96, 99, 126, 137, 141
Threshing machines, 78
Tillage, 21
Timothy, 24
Tobacco, 11, 13, 17, 18, 23, 24, 27, 32, 46, 85, 86, 100
Tomatoes, 90
Transportation, 29, 56, 58, 159
Transvaal, 7
Treaty of 1783, 48
Treaty of Fort Stanwix, 54
Treaty of Paris, 2
Turkeys, 8
Turnips, 19, 27
Twentieth century, 133, 155
Twine binder, 117

United States, area of, 3
  geological survey, 6
Utah, 7, 146

Vetches, 19, 47
Virginia, 24, 26, 27, 31, 32, 40, 45, 54, 86, 96
Virginia colony, 17, 29

War of 1812, 47, 53, 55, 107, 159
Washington, George, 45
Washington (state), 144
Water power, 3, 5
  transportation, 11
Wealth, 162, 163
  concentration of, 152
Weasel, 8
Welland Canal, 12
West, the, 59, 95, 107, 116, 161
  effect of cotton culture on, 65
  settlement of, 56
Western lands, speculation in, 73
  trade, 59
West Indies, 1, 2, 22, 65
West Virginia, 11
Westward movement, 53
  results of, 57
  summary, 159
Wheat, 11, 13, 19, 26, 27, 42, 46, 80, 85, 90, 112, 118, 122, 135, 138, 144, 145
White fish, 8
White pine, 9
Whitney, Eli, 33, 63
Wine culture, 22
Wisconsin, 57, 84
Wood, 47
Wool, 18, 27
World's Fair in London, 78
World War, 133, 143, 162
Wyoming, 7, 141, 146

Yellow pine, 9

Zinc, 7, 13

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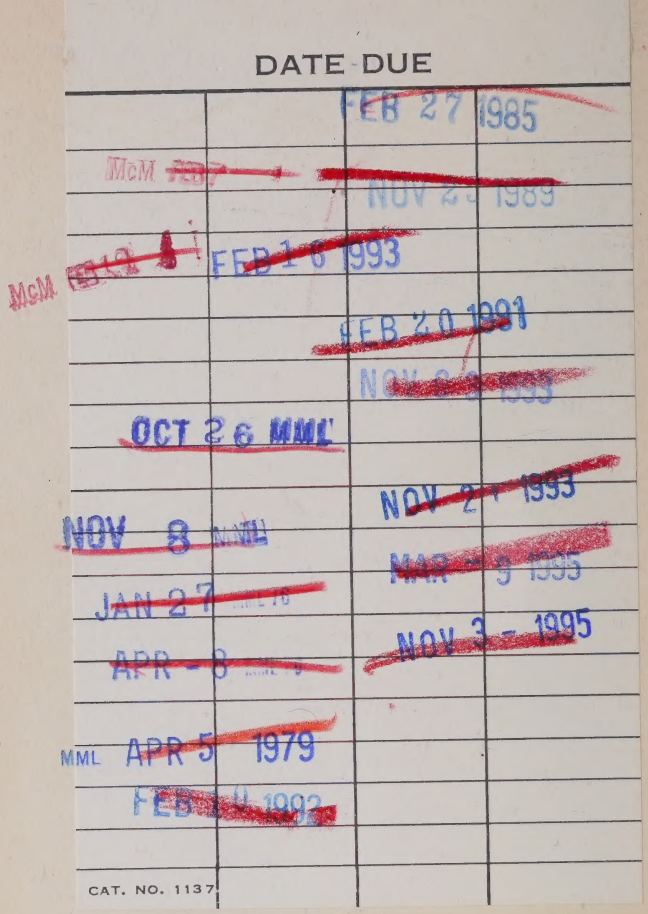
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